

EDUCATIONAL PSYCHOLOGY OF THE ANCIENT HINDUS

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UNIVERSITY OF CALCUTTA

1949

Rs. 8/-

(PRINTED IN INDIA)

PRINTED AND PUBLISHED BY SIBENDRANATH KANJILAL,
SUPERINTENDENT (OFFG.), CALCUTTA UNIVERSITY PRESS
48, HAZRA ROAD, BALLYGUNGE, CALCUTTA.

1630B—July, 1949—2.

To
HON'BLE DR. SYAMAPRASAD MOOKERJEE,
M.A., B.L., D.LITT., LL.D., BARRISTER-AT-LAW,
MINISTER, GOVERNMENT OF INDIA,
IN TOKEN
OF
SINCERE REGARD AND ESTEEM

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PREFACE

The present treatise deals with the contributions of the ancient Hindus to Educational Psychology ; and it follows precisely the same method of investigation as its predecessor, "The Jaina System of Education" and in a sense, it may be regarded as the by-product of the author's researches conducted in the field of educational system in ancient India.

That the ancient Hindus, possessed as they were of a thorough knowledge of educational psychology, based their teachings on sound psychological principles cannot be gainsaid. This will be abundantly evident to the readers from a careful perusal of the present treatise.

Whether the ancient Hindu scholars wrote separate treatises on "Educational Psychology" or not is hard for us to assert in the absence of any reliable documentary evidence. But scholars engaged in researches for such materials will be amply rewarded for their labour in this novel and as yet untried field.

The term "Hindu" has been used in a wider sense so as to include two other cognate religions—Buddhism and Jainism. In the preparation of this work on educational psychology, materials from the Brahmanic, the Buddhistic and the Jaina sources have been freely used both in the originals and in the translations. Repetitions of facts, to a limited

extent, have been found unavoidable. A pretty complete bibliography is given at the end of the book.

In the present treatise, the development of educational psychology has been traced from the time of the R̥gveda down to the twelfth century A.D., based on stray materials from the writings of the ancient Hindus and their contemporaries belonging to cognate faiths. The process of this development does not seem to have been steady and systematic ; but it seems to have a chequered career, and as such the authorities have not been cited in the footnotes in strict conformity with chronology. The method followed is topical rather than chronological, and each item of discussion has been systematically developed without any regard to chronology. The book is divided into eleven chapters, the last being a short resumé.

The author is aware of many inevitable shortcomings in a pioneer work like this present adventure of his in an altogether new field ; and he will be extremely obliged to scholars with a more thorough knowledge, some of whom may happen to read these pages, for corrections, suggestions and hints ; and he will deem his labour as more than amply rewarded if his work stimulates fresh inquiries into this special field of knowledge—if it rouses even a single reader to the task of making some addition to the timeless and spaceless domain of thought and truth.

The author must place on record his grateful thanks to Dr. Surendranath Das Gupta, M.A., Ph.D., I.E.S., and Dr. Satkari Mookerjee, M.A., Ph.D., of the Sanskrit Department, Calcutta University, for their favourable recommendation of the present work to the Publication Committee of the University. Thanks are due to the authorities of the Imperial and the Calcutta University Libraries for offering facilities to the author in the preparation of his present treatise. Grateful thanks are due to the Superintendent of the Calcutta University Press and his staff for their kind, prompt and generous assistance in securing the publication of the book. Last, but not the least, the author notes the ungrudging help rendered by his wife, Mrs. Nirupama Das Gupta, B.A., Kavyatirtha, in revising the manuscript.

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ERRATA

Page	Para.	Line	For	Read
2	1	8	Dwārakā	Dvārakā
12	(Foot-note, 1)		Soccity	Society
20	(Foot-note, 3)		Daasāo	Dasāo
24	(Foot-note 1)		Purusacaritra	Puruṣacaritra
31	1	21-23	Rūpagoswāmī	Rūpagosvāmī
34	1	13	"	"
"	"	"	fifteenth century	sixteenth century
35	2	5	Errotic	Erotic
48	1	12	Untaimed	Untamed
51	1	3	Padagogical	Pedagogical
61	1	Last	"	"
62	1	6	Sensual	Sensuous
65	1	8	"	"
69		2	Basis	Bases
83		1	Are	Is
115	1	6	Intellegence	Intelligence
118	(Foot-note 6)		Eommentary	Commentary
120	1	8	Faminine	Feminine
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123	1	5	Kāvyaṁimāmsā	Kāvyaṁprakāśa
125	2	4	Udvatasāgara	Udbhaṭasāgara
127	2	5	Nature	Nurture
159	1	6	Erroic	Erotic
180	1	9	Illustrated	Illustrated

P 34, L. 5, Vjśvanāth Kavirāj is a fifteenth century scholar. According to other authority (P 165, L. 6) he is said to have flourished in the fourteenth century A.D.

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EDUCATIONAL PSYCHOLOGY, OF THE ANCIENT HINDUS

CHAPTER I

CHILD PSYCHOLOGY

The object of the present chapter is to offer a critical account of the basic principles of child psychology, based on materials to be found in the writings of ancient Hindu authors, whose knowledge of the subject was accurate and thorough, if not also astonishingly modern. The topic dealt with is, as it is bound to be, as old as humanity itself. The details and the methods of approach have differed under different circumstances; but the substantial theme has always been the same—the scientific care of the children with a view to their welfare.

Child psychology embraces the following items within its scope: (i) the classification, or more properly, the development of the stages of the human life from the embryonic to the adolescent stages; and (ii) the characteristics of each stage. A scheme of education for the growing child, based on these, has been described in Chapter IX.

It is clear from the records extant that the parents in ancient India took a scientific care for the health and diet of the prospective mother, the

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foetus, and the child. The prospective mother used to be provided with a special diet and a suitably healthy house. This wise line of conduct on the part of the guardians of the household is distinctly referred to by Megasthenes¹ in the fourth century before the Christian era. One Jaina authority mentions similar precaution taken on the part of the King of Bāravaī (Dwārakā) for his consort. This astute King provided his queen, during the period of her pregnancy, with food, clothings, beds, and accommodation calculated to have healthy and beneficent effect both on the mother and the child.² We find reference to similar practices in Buddhist literature.³ It is evident, then, that this subject of biological importance evoked the great attention of all sections of the people of India—Hindus, Jainas, and Buddhists—from the earliest period of recorded history.

The classification or demarcation of the human life :—

The authorities in India—both ancient and mediaeval—differ as to the stages of the human life. Nilakaṇṭha, the commentator of the Mahābhārata, lays down ten stages, *viz.*, the embryonic

¹ Megasthenes, *Ancient India*, tr. by J. W. McCrindle, p. 98.

² The *Antagaḍa-Dasāo* and The *Aṇuttarovāvaiya-Dasāo*, tr. by L. D. Barnett, pp. 25-26.

³ The *Romantic Legend of Śākya Buddha*, tr. by Samuel Beal, p. 261.

stage, the birth, the infancy, the childhood, the boyhood between the third and the tenth year, the early adolescence, the youth, the middle age, the old age and death : “daśāḥ Śarīrasyāvasthā iti yāvat.tāśca garbhavāsaḥ, janma, bālyam, kaumāram, pauganḍam, kaiśoram, yauvanam, prauḍhatvam, vārdhakyam, mṛtyuśceti,”’ The Uvāsagadasāo, a much later Jaina Aṅga, gives us a different classification. It classifies human life into eight distinct stages, viz., the dull stage, the playful stage, the experimental stage, the erect stage, the learning stage, the ascetic stage, the jina stage and the prostrate stage,² each with characteristics of its own. The Garuḍa Purāṇam offers a critical and analytical account of the stages in the growth of the human being. It tells us of the gradual growth of human organism up to adolescence chronologically. We quote below the appropriate verses from the above text which run as follows :

garbhacca navamaṁ hitvā śīsurā māsaṣoḍaśam.
 balaścātha parairjñeya ā māsasaptaviṁśataḥ
 a pañcavarṣāt kaumāraḥ pauganḍo navahāyanaḥ
 kiśoraḥ ṣoḍaśabdaḥ syāt tato yauvanamādiṣet.”’

¹ The Mahabhārata, edited by Haridas Siddhanta-vagis, Vanaparva, Canto 110, Vol. VI, p. 1119.

² The Uvāsagadasāo, tr. by A. F. Rudolf Hoernle, Vol. II, Appendix, p. 23.

³ The Garuḍapurāṇam, ed. by Panchanan Tarkaratna, Uttarakhaṇḍam, Canto 25, vv. 9-10, p. 714.

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According to this account, infancy lasts up to the sixteenth month from birth, boyhood takes up the eleven months that follow, *kaumāra* occupies two years and nine months following the period of boyhood, *pauganḍa* is represented by the next four years, and then we have *kaiśora* or early adolescence occupying seven years more, when adolescence commences at the age of sixteen. In this chapter, we propose to discuss briefly and systematically the physical, the emotional and the mental traits of the growing child.

THE CHARACTERISTICS OF CHILDREN

A number of authorities describe in detail the characteristics of children. According to the *Uvāsagadasāo*, an authoritative Jaina treatise, the human child after birth remains totally inactive for a period of seven days.¹ During this period the child is a mere bundle of instincts as it were—totally incapable of any action whatsoever. This description of the *Uvāsagadasāo* is corroborated by the *Nyāyasūtra*, which thus refers to the utter helplessness of the new-born babe, “As a matter of fact, when the child is just born from his mother’s womb, he is not in a position to perform any acts.”² Exactly the same opinion is expressed in the *Ādipurāṇa*, according to which the sense-organs

¹ The *Uvāsagadasāo*, Vol. II, Appendix, p. 23.

² Gotama, *Nyāyasūtra*, tr. by Ganganath Jha, p. 456.

of the human infant remain dormant and inactive for a certain period. The text relevant to the point runs :

“ Śaktirna calate'ṅgānām pārśvasya parivartane.”¹

The senses of the child immediately after birth remain inactive when these are not properly functioning. “ When the infant is just born, his sense-organs are incapable of apprehending things; and yet he is found to be experiencing joy, fear and sorrow, these being inferred from such indicatives as smiling, trembling and crying (respectively).”² The infant just after birth expresses its desire for its mother's milk through indications. Caraka, the great physician of the first century A.D., holds that human infants act instinctively, immediately after birth, without any training whatsoever. It is instinctively, and instinctively alone, that the infants learn to suck their mothers' breasts, to smile and to fear. He says, “ Without being taught, children are seen to develop evidences of inclination to suck the breasts of their mothers, to smile, to take fright.”³ This is the period which is described as the dull stage in the Uvāsagadasāo thus, “ What he means is this :

¹ Maharṣi Vedavyāsa, Ādipurāṇa, edited by Oriental Religious Publication Society, v. 49. p. 25.

² Gotama, Nyāyasūtra, tr. by Ganganath Jha, Vol. III, p. 81.

³ Caraka Saṁhitā, tr. by Avinash Chunder Kaviraj, Vol. I, p. 120 ; Nyāyasūtra, Vol. III, p. 89.

beginning with the day of birth, for (a period of) seven days, till they come out of a condition of mental obstruction, (living) beings are dull (manda) or semi-conscious (momūha). This he calls the 'dull stage' (manda-bhūmi).¹ At the initial stage of this period, the infants' senses are totally inactive. The Aitareya Brāhmaṇa does not accept the view discussed above. According to it the activity of the sense of hearing is manifest even at an undeveloped period of the dull stage.²

The activities of the senses begin, anyway, after the completion of what is technically described as the dull stage. The ancient authority quoted strongly supports the view: it holds that the infant is capable of responding to light as well as sounds from the cradle. It enjoys music ecstatically. This is a concrete fact, of which every scientific student should do well to take note. It is common knowledge that the infant, on its arrival at the stage of childhood, when its senses of sight, hearing and other senses are in an advanced stage of development, takes a good deal of delight in coloured objects and music. Fergusson has discovered a plate relating to the infancy of the Buddha which has a significant

¹ Uvāsagadasāo, Vol. II, Appendix, p. 23.

² Aitareya Brāhmaṇa, tr. by Dr. Martin Haug.
Book III, Chapter I, p. 109.

bearing on this aspect of our thesis. In this plate, the Lord Buddha in his infancy is depicted in the act of being charmed with toys and figures by the women in attendance. Here wild animals as well as musical instruments figure in the show. Here there is a correct but probably unconscious testimony to a fact of the child psychology. This plate is thus described, "The woman holds a child on her knee, apparently amusing it with a toy held in her right hand; to the right and left of them are female slaves with chauris, whilst one beholds a parrot and fruit. Below are eleven small figures, some of them making rams butt, others are wrestling, and some playing on musical instruments for the child's amusement. This is probably intended to represent the infancy of Buddha nursed by his mother Māyādevī (or Mahāprajāpate)."¹

MOTOR ACTIVITY

It is a well-known psychological fact that the sense-activity in the growing child is followed by motor activity. The infant is physically active, after it responds to outside stimuli through its senses. The motor activity is conditioned by the proper maturity, and functioning of all the senses; and it is manifest in infancy, and continues to grow

¹ James Fergusson and James Burgess, *The Cave Temples of India*, pp. 333-34.

with unabated energy up to early adolescence. We quote below a Buddhist text which shows that this aspect of child psychology was common knowledge in ancient India: "Well then, Upāli, that boy-child on another occasion, when he has grown older, following on the ripening of the sense-faculties, plays with whatever may be play-things of such children."¹

According to the *Uvāsagadasāo*, the playful activity—the second stage in the physical change of human being—commences from the eighth day of the infant's birth; and it continues up to the time when it learns to walk by catching hold of the parents or surrounding objects. The chief characteristics of the infant in the playful stage are either crying, screaming or smiling. These activities are innate with the infant, owing to its experience of the state of happiness and unhappiness in the previous birth. The *Uvāsagadasāo* describes the characteristics of the growing child as follows: "Afterwards those that have arrived (in the present birth) from a state of torment (in a previous existence) perpetually cry and scream; while those that have come from a state of happiness laugh in the perpetual recollection of it. This he calls 'the playful stage' (*khīḍḍa-bhūmi*)."² It has been stated earlier in our discussion that crying and smiling

¹ The Book of the Gradual Sayings, tr. by F. L. Woodward, Vol. V, p. 141.

² The *Uvāsagadasāo*, Vol. II, Appendix, p. 23.

are automatic actions or instincts; and the infant instinctively cries and smiles. Whatever may be the value of the argument put forth in the *Uvāsagadasāo* as to the cause of crying and smiling of the infants, the canon supports the theory that the infant instinctively cries and smiles. In the playful stage, the sense-activity of the infant is manifest after the instinct which marks the second stage of physical development in the growing organism of the infant. Sense-activity, however, continues to grow gradually and reaches perfection with the physical growth of the growing infant. It is followed by motor activity, as stated before. This activity, too, grows concomitantly with the physical growth of the growing child.

The motor activity appears very early in infancy, and it is concomitant with the physical growth. It represents the first effort of the child towards self-realisation through self-help in an unconscious fashion. The infant, even in a state of utter helplessness, attempts the movements of its limbs by turning round the head for gaining strength when the mother runs to its help to prevent the precarious danger. The following extract supports our contention: "A child—turning round for strength—is to be brought up. Or else his mother is sufficient for him, or his mother is (a source of) strength for him."¹ The

¹ The *Nighaṇṭu* and The *Nirukta*, tr. by Lakshman Svarup, p. 142.

infant also assists the movements of its limbs by lifting its throat and head. We have textual evidence in support of our assertion.¹ The infant at the initial stage of its movement cannot walk on its legs : it crawls on its four limbs—hands and feet—much after the fashion of a quadruped. The truth of the statement is supported by the authority already cited. This view of the Aitareya Brāhmaṇa is untenable, for, the new-born baby has to wait longer before it gains sufficient strength for walk. The Buddhacarita mentions that the strength in the limbs of the infant to crawl on the ground develops later than the instinct to suck. The following quotation will bear us out: “For he too sucked milk in his infancy, and later in course of time he crawled on the ground.”² The R̥gveda Saṃhitā also mentions the crawling of the child.³ The quotation given above proves that the capacity for walking appears in the child after a considerable period of time has elapsed after its birth. It is a phase of post-natal development. In the next stage, the child learns to walk under the guidance and with the help of its parents, and by catching hold of the surrounding objects. This walking-stage

¹ Aitareya Brāhmaṇa, tr. by Dr. Martin Haug, Book III, Chapter I, p. 109.

² The Buddhacarita, tr. by E. H. Johnston, Part II, v. 31, p. 38,

³ The R̥gveda Saṃhitā, tr. by H. H. Wilson, 8th Aṣṭaka, 3rd Adhyāya, v. 3, Vol. VI, p. 212.

of the child is styled the experimental stage in the *Uvāsagadasāo*. “ Then when they attempt to walk along on the ground, holding on to the hands or legs of their parents or to a bed or a stool, that he calls the ‘ experimental stage ’ (*Vimāṃsā-bhūmi*).”¹ It is also at this period that the child attempts to speak. It is to be noted that the initial attempt at speech begins with the use of the organ of tongue.² The real power for speech develops in a child when he learns to walk.³

It is a phenomenon of great psychological interest that the child conducts experiments in speaking as well as in walking simultaneously. This fact was noted and expressed by the greatest of India’s epic poet in his famous work, the *Raghuvamśam*, thus : “ The Royal infant went on adding to the pleasure of the King as he learned to repeat half audibly the words uttered by the nurse, to walk under her guidance and to bow down to the King at the signal, ‘ nama ’ .”⁴ There, we are told, how Raghu, the hero of the epic, learnt the rudiments of language, social manners, and etiquette, etc., from his nurse while being conducted by her

¹ The *Uvāsagadasāo*, Vol. II, Appendix, p. 23.

² *Chāndogyopaniṣad*, tr. by F. M. Müller, Part I, p.73.

³ *Aitareya Brāhmaṇa*, tr. by Ramendrasundar Trivedi, p. 229.

⁴ *Kālidāsa*, *Raghuvamśam*, Canto III, v. 25 ; Dr. D. C. Das Gupta, *Educational Ideals in Kālidāsa’s India*, *Prabuddha Bhārata*, March, 1942.

in the leading-string. The truth of the view is substantiated by the *Ādipurāṇa* as well as by Kṣemendra, a ninth century Kashmirian scholar. We quote below relevant passages :

“ Kāle katipayāṭite bhāṣate parigacchati.”¹

“ Pīyūṣa skhalitārdhavarṇalalītālāpaṇiḥ śīśuḥ varṣati.”²

In exceptional cases, religious traits are manifested in a little child through its speech. Kalhaṇa Miśra, the author of *Rājatarāṅgiṇī*, refers to such a case : “ From her childhood her divine speech was manifest.”³ The child is also very simple, specially raised in a forest hermitage,⁴ and the sense of self-respect is not developed in it as well.⁵ In the next stage of physical growth, the motor activity continues unchecked with full vigour, when it becomes almost hopelessly an impossible task for the nurses to control the child. During this period, it can stand quite still unaided, and can run about here and there. The *Uvāsagadasāo* styles it an “ erect stage ”—the fourth stage in the physical growth of the growing child. The

¹ Maḥarṣi Vedavyāsa, *The Ādipurāṇa*, edited by Oriental Religious Publication Society, v. 51, p. 25.

² Kṣemendra, *Avadāna Kalpalatā*, Vol. II. R. A. S. B., p. 847.

³ Kalhaṇa Miśra, *Rājatarāṅgiṇī*, tr. by R. S. Pandit, *Third Taraṅga*, v. 433, p. 92.

⁴ Bhavabhūti, *Rāma's Later History or Uttara Rāma-carita*, tr. by S. K. Belvalkar, Act VI, p. 91.

⁵ Bhaṭṭathiripada Nārāyaṇa, *Nārāyanīyam*, edited by P. N. Menon, v. 7, p. 942.

Jaina canon describes the characteristics of this period as follows : “ The time when they are fully able to walk on their feet, he calls ‘ the erect stage ’, (ujugata-bhūmi).”¹ At this stage the child is restless and actively agile.² Hemacandra, the great Jaina scholar of the twelfth century A.D., describes the same characteristics of the growing child. It becomes unmanageable for the nurses to control their wards during this period, and they get tired by constantly running after them. The following quotation supports our statement : “ The royal boys grew day by day. . . . Their fathers smiled at their very charming smiles, but were astonished at their strong walking. Even when held by the nurses, they did not stay on their laps. Running about rapidly as they liked, they tired out their nurses running after them. Strength is a quality of the noble.”³ During this period, as the child grows in years, it becomes stronger and stronger. It is a curious fact that cruelty appears as a special trait in the child at a certain stage of its development. It runs to take pleasure in giving pain to others, specially to wild birds and insects. We have authoritative text in our support : “ The royal boys, surpassing the Vāyukumārakas in speed,

¹ Uvāsagadasāo, Vol. II, Appendix, p. 23.

² Hemacandra, Triṣaṣṭīśālākā Puruṣacaritra, tr by Helen M. Johnson, Vol. II, p. 67.

³ *Ibid.*, p. 67.

caught birds, pleasure-parrots, peacocks, etc.”¹ Next as the child grows older and reaches boyhood, it shows its cruelty to man as well, not sparing even its near relatives. We learn from the Mahābhārata how Bhīma in his boyhood was fond of violence, and of physical feats. He was cruel, unusually strong, possessed of valour, swift-footed and used to assault mercilessly his own cousins. Kuntī, the mother of the five Pāṇḍava brothers, lamented thus :

“ sarveṣāṃ mama putrāṇāṃ sa ekaḥ krūravikramaḥ
bahvāśī vipratipaśca bālye’pi rabhasaḥ sadā
udvepate me hṛdayaṃ ye me duryodhanādayaḥ
bālye’pi tena yudhyanto vāraṇenēva marditāḥ ”²

This cruelty trait—love of violence and lawlessness—is sometimes transformed into a criminal tendency culminating in murder. This trait among the juvenile criminals is found not only among the members of the lowest strata in society³ but also among the princes.¹ This special trait appears early in life, and later on develops into a potentiality for murder or actual murder.

¹ Hemacandra, *op. cit.*, p. 67.

² Mahābhārata, Part I. edited by Haridas Siddhanta-vagis, Udyogaparva, vv. 10-11, p. 567.

³ Legends of Indian Buddhism, tr. by Winifred Stephens. pp. 31-32.

⁴ Kathā-Sarīt-Sāgara, tr. by C. H. Tawney, Vol. I, Āditastaraṅga 28, Taraṅga 2, vv. 152-53, p. 255.

Over and above the dark traits in childhood, the fighting instinct or pugnacity also characterises this period. The children of noble breed, especially of noble royal family, take delight in the company of the brave, and display utter disgust with the association of the mean and the lowly. This fact is clearly illustrated by Kalhaṇa Miśra in his *Rājatarāṅgiṇī* where he describes the young days of a Kashmirian prince, raised in the house of an humble potter, as a safeguard against the evil design of the usurper to the throne of Kashmir. This fact proves conclusively that the noble trait is sure to manifest itself in a royal infant, even if raised in a poor environment. The royal child, as he grew up, became more and more averse to the companionship of the base and the meaner associates.¹ This is what it should have been.

Children, upon reaching their boyhood, instinctively imitate adult occupations in games. They play the role of a horse or an elephant. Some again, of noble origin, play the role of a King. In games they display their natural bent of mind, aptitudes, interests, origin and valour. Hemacandra, the great Jaina scholar of the twelfth century A.D., describes the children's imitation of adult games in the following verses :

¹ *Rājatarāṅgiṇī*, tr. by R. S. Pandit, Third Tarāṅga, v. 110, p. 67.

“ itaśca Cāndragupto'rbhai ramamāno dine dine
vilebhe bhūpatiriva tebhyo grāmādikam sadā.
hastikṛtya hayikṛtya cāruroha sa bālakān
prāyo hi bhāvinī lakṣmiringitairapi sūcyate’’¹

Kalhaṇa Miśra in his *Rājatarāṅgiṇī* tells us how the grandson of Pravarasena, the Kashmirian King, born in the house of a potter, played the role of a King while playing with his associates in boyhood. In the game he used to bestow marks of royal honour on his playmates, and would display royal valour and virtue while maintaining discipline among his associates. The little boys, however, elected their own King from amongst them; and their choice fell upon the one possessing manly virtue and healthy physical vigour. The text runs: “ He who had extraordinary energy was made by the little boys in their games the rājā of their own group as the lion cub, in the forest, by the young animals.

He distributed presents, conferred favours, and kept the lads under control; never did he behave in a manner unworthy of a King.’’²

We have noticed in the foregoing discussion how a child or a boy in the early days instinctively imitates everything from the environment. In his

¹ Hemacandra, *Sthavirāvalīcarita*, edited by Hermann Jacobi, vv. 242-43, p. 236.

² *Rājatarāṅgiṇī*, tr. by R. S. Pandit, Third *Taraṅga*, vv. 112-13, p. 67.

early games adult occupations of varied types, from the humbler rank to that of a monarch, nay even the quadruped life, figure very prominently. The growing child, upon reaching boyhood, also imitates adult occupations pertaining to lower and higher needs of life. He with his associates builds houses, walls and cities, only to demolish them afterwards. In the games the physical vigour of childhood and boyhood conspires with the fighting instinct against the playmates themselves, who not unfrequently, being split up into two hostile gangs, used to demolish the buildings, the walls, and the cities, etc., of each opposing party with violence. The boy at this period does not stick to one occupation. He constantly changes one occupation for another, as he is guided by impulses peculiar to this age. An extract cited from the *Ānandavṇḍāvana-campūḥ* thus supports our statement : “*kadācidapi dhūlibhireva prācīrapuragr̥hādi nirmimīte kadācidapi paranirmitaṁ bhanakti. te'pi tannirmitaṁ bhañjanti. punarapi nirmimīte punarapi bhanakti.....evamatikāla-khelayā gr̥hāgamanamapi vismṛtya rathyāsu khelantaṁ khelantaṁ bālasūryamiva tatpurapurandhrayo mātṛvadativatsalāḥ salālitayamabhidadhati.*”¹

Even the little girls freely join the games with the boys before the dawn of sex instinct in them.

¹ *Karṇapūra*, *Ānandavṇḍāvana-campūḥ*, edited by Ramnarayana Vidyaratna, para. 111, pp. 259-60.

Thus Śree Kṛṣṇa in his childhood and boyhood freely played with the girls who joined him in games innocently. In these games violence, characteristic of the boys and the girls of this age in life, figures prominently. The following relevant extract supports the above point : “ parañca dhūsarayan sahasamvāsatayā śīśutayā ca niḥsaṅkocameva vrajabālīkā api sahakhelantiḥ sahacarabālaka-sādhāraṇyenaiva khelayā paritoṣayan kadācidapi tābhīstairapi kalahāyamānastā stānapi taḍayan tābhīstaiśca tāḍitaḥ kadācidddhasati kadācit kupyati na kupyati ca.”¹

Our discussion reveals the important fact that the motor activity of the experimental stage is constantly on the increase with unabated vigour in the erect stage, the next higher stage in physical development; and with physical exuberance is manifest restlessness, bringing in its trail cruelty to beasts, birds, and insects. This again results in the instinct of homicide. The young boys and girls are not serious about their games : they play for pleasure, when restlessness and fickle-mindedness dominate the early stage of their life.

LEARNING STAGE

The fifth stage in the development of the human being is the learning stage, which is the most profitable time for him to commence his education in the primary school when he is

¹ Karmapūra, *op. cit.*, para. 110, p. 259.

physically and mentally fit to receive it. According to Śukrācāryya, the physical growth of the child, after the fifth year from conception or fourth birth year, is rapid, when it grows daily.¹ The Uvāsagadasāo describes the learning stage as follows : “ The time when they are made to learn the arts, he calls ‘ the learning stage ’ (śekha-bhūmi). ”² In the learning stage the young learner has a natural aptitude for facts to satisfy his inquisitiveness with additional information. This is evident from the following quotation : “ Please, Sir, inform me still more,” said the son. “ Be it so, my child,” the father replied.³ It is a common psychological truth, that it is a hopelessly difficult task even for the adults to satisfy the hunger for facts, so natural to the young learners, at this period of their physical and emotional development.

According to the Garuḍa Purāṇam a child should receive formal education for ten years, under proper guidance, commencing it after the completion of the fifth year. the first five years being spent in the nursery. We have the following text in our support : “ A child should be only fondled for the first five years, and ruled or tutored

¹ Śukrācāryya, Śukra-Nīti, tr. by B. K. Sarkar, Chap IV, Sec. IV, v. 373, p. 179.

² The Uvāsagadasāo, Vol. II, Appendix, p. 23.

³ Chāndogya Upaniṣad, tr. by F. M. Müller, Part I, v. 4, p. 101.

for the next ten.”¹ Mallinātha, the commentator of Kālidāsa, recommends the early beginning of the formal education of a child at the age of five.² But some Jaina as well as Buddhist authorities, unlike the Uvāsagadasāo, set up the eighth year³ as the lower age limit for formal education of the young scholars in the art school. Physical energy is steadily on the increase in boyhood: it grows all through adolescence. At this period, however, physical restlessness, peculiar to childhood, disappears, and its limbs are properly disciplined though its mind is unsteady and fickle, even upon reaching adolescence. “O King! the seven year old child, whose limbs have been disciplined....., can now perform his mother’s behests.”⁴ The instinct of curiosity is perennial in childhood, and it lingers in grown-up boys and even in ladies—a fact borne out by many ancient texts. “Then a boy nearly five years old, very lovely in person, sought to come out of an apartment with eyes

¹ The Garuḍa Purāṇam, ed. by Manmathanath Dutta, Pūrvakhaṇḍam, Canto 114, v. 59, p. 344.

² Kālidāsa, Raghuvamśam, Canto II, v. 28.

³ Ardha Māgadhī Reader, edited by Banarsi Das Jain, p. 110; The Antagaḍa-Dasāo and Aṇuttarovavaiya-Dasāo, tr. by L. D. Barnett, p. 30; The Romantic Legend of Śākya Buddha, tr. by Samuel Beal, para I, p. 72.

⁴ The Ummagga Jātaka, tr. by T. B. Yatawara, p. 82.

wide open in curiosity common in children,'¹ and again, "In spite of the fact that [very] young maidens, by reason of their eager curiosity, are [a bit] fickle-minded."²

At this initial stage of life of the children, when they pass into boyhood, the traits of passion or more exactly the emotions of anger, the instinct of cruelty and the like develop in them. At this stage, the young learners are fond of hunting, riding, pleasure-trip or excursion either for feasting the eyes with beautiful scenes or for soothing the mind with shooting. The Śyainika Śāstra refers to hunting excursions that were in vogue in mediæval India with a special emphasis on the benefit relating to various games. We gather from this short treatise that there were various types of emotions such as (1) fierce emotion, (2) feeling of wonder, (3) emotion of fear, (4) feeling of laughter, (5) emotion of heroism, and (6) emotion of sorrow that are excited in the hunter while hunting wild games.³ These emotions do not suddenly sprout out in adolescence: these manifest themselves gradually in the growing child from boyhood to early adolescence. These emotional traits are

¹ Viśākha Datta, *Mudrā Rākṣasa*, tr. by Prof. K. H. Dhruba, Act I, p. 10.

² Rājaśekhara, *Karpūramañjarī*, edited by C. R. Lanman, Act II, p. 261.

³ Rājā Rudradeva of Kumaon, *Śyainika Śāstra*, tr. by MM. Haraprasad Sastri, pp. 31-32.

of great value and significance to early adolescents in their hunting games. Let us quote a relevant extract from the Romantic Legend of Śākya Buddha, depicting the hunting excursions of Lord Buddha in his boyhood which gave him immense pleasure : “ But now, having completed twelve years and being perfectly acquainted with all the customary modes of enjoyment, as men speak, such as hunting, riding, and driving here and there, according to the desire of the eye or for the gratification of the mind ; such being the case, it came to pass on one occasion that he was visiting the Kan-Ku garden, and whilst there amused himself by wandering in different directions, shooting with his bow and arrow at whatever he pleased ; and so he separated himself from the other Śākya youths who were also in the several gardens enjoying themselves in the same way.”¹ We learn from the same authority how the young Siddhārtha, while out in the agricultural field in the company of fifty boys, cried out in lamentations after witnessing the hard work of the agriculturists in the field : “ Alas ! alas ! how full of misery is human life.”² This emotional trait is innate in human beings, only to manifest itself at the distress of others in early

¹ The Romantic Legend of Śākya Buddha, tr. by Samuel Beal, p. 72, para 2.

² *Ibid.*, p. 74 ; Lalitavistara, tr. by Rajendra Lal Mitra, p. 194.

adolescence. The relevant text runs: "The compassion innate in his nature, overflowed at the sight of distress."¹

Finally, let us now turn to the discussion of mental traits of the infant all through its physical growth. Our discussion has so far revealed the physical basis of instinct, sense-activity, motor activity, sentiments and emotions. These characteristics manifest themselves in human beings in a particular period of their physical growth. Some of these traits overlap one another, and these grow and develop gradually. The physical growth is also the basis of mental development. The intelligence of a man in his infancy is not fully developed: his mind is not formed, he is guided by instinct and sense-activity, and in his speech he uses his tongue. "Like children whose mind is not yet formed, but breathing with the breath, speaking with the tongue, seeing with the eye, hearing with the ear."² In infancy the mind is undeveloped, its power is latent, and it manifests itself in adolescence.³ In a word, mental ability remains dormant in human being, and it develops gradually at the dawn of puberty. The mental

¹ Aśvaghōṣa, *The Saundarananda*, tr. by E. H. Johnston, Canto 2, v. 17, p. 9.

² *Chāndogyopaniṣad*, tr. F. M. Müller, Part I, p. 73.

³ *The Vedāntasūtras of Bādarāyaṇa*, tr. by Rai Bahadur Srisa Chandra Vasu, p. 366.

power is latent in infancy, and it is innate—inborn or hereditary.

Intelligence or native ability, though inborn and latent in infancy, grows gradually and steadily with the physical growth of the growing child, and it reaches maturity at adolescence or youth. The following quotation bears us out : “ Together they gradually grew up like intellect and vigour.”¹ And again : “ And this boy, after having passed childhood, and, with just ripened intellect, having reached the state of youth, will become a brave.”² The child upon reaching adolescence not only grows in its bulk, height and weight, but also in intelligence. “ A boy on whose body all limbs will be well formed, and of full volume, weight, and length, of a lovely figure like that of the moon ! And this boy, after having passed his childhood, and, with just ripened intellect, having reached the state of youth, will repeat, fully understand, and well retain (in his mind) the four Vedas.”³ Not all persons in their adolescence reach maturity of intelligence—some of them remain children in intelligence even in their advanced age owing to arrested development of native abilities, as is evident from the following extract :

¹ Hemacandra, *Triṣaṣṭīśālākā-puruṣarcaritra*, Vol. I, p. 99.

² Jaina Sūtras, tr. by Hermann Jacobi, Part I, p. 240.

³ *Ibid.*, p. 221.

“What wonder is there that childish persons on account of their undeveloped intellect are unable to grasp Ātman!”¹ Our discussion shows that human beings from their birth are mere bundles of instincts, when they act instinctively. Gradually they respond to outside stimuli through their sensory organs. In the next stage of their physical development motor activity precedes the development of intelligence. All these traits evolve gradually in the infants along with their physical growth.

¹ The Māṇḍūkyaopaniṣad, tr. by Swami Nikhilananda, p. 333.

CHAPTER II

ADOLESCENT PSYCHOLOGY

We propose in this chapter to discuss the various stages in the growth and development of the child—psychological, emotional and mental—basing our discussion on the materials supplied by the authorities of ancient India. The most basical of all these stages is the physical one. It is, therefore, fitting that at the outset we should have a discussion of the physical characteristics of the adolescent youth of both the sexes—traits which are not conspicuous in infancy and in childhood. The physical characteristics of both the sexes, though not perceptible in boyhood and girlhood, are conspicuous by their contrast in their adolescence. Females differ from males in their having hard breasts, small hands and feet, small mouths, arrested development of the upper part and the fuller development of the lower part of the body. Females also differ from males in point of gait: they lack assertion in walking, standing, sitting, sleeping, eating and swallowing. The former differ also from the latter in their modes of dress.¹ The physical growth of the

¹ Buddhaghosa, *Atthaśālinī*, tr. by Maung Tin, Vol. II, p. 419.

adolescents of the fair sex is in harmony with their height and weight. This is a biological phenomenon, the truth of which is corroborated by many authoritative texts. Thus an authority describing a heroine says, "She was excellent in the tokens and marks of distinction, perfect and well made as to volume, weight, and height,"¹ She was a perfect heroine indeed: the growth in height is gradual. This is a common fact attested by observation. An authority asserts, "And thus he gradually increased in stature."² Not only the growth in stature but also harmonious development of all physical characteristics is gradual.³ The proportionate physical growth as to height, weight, and volume holds good even in the case of males in their adolescence. The following quotation bears us out: "A boy on whose body all limbs will be well formed, and of full volume, weight, and length, of a lovely figure like that of the moon!"⁴ This psychological observation of the ancient Hindus, as to the physical growth of the adolescents of both the sexes, seems to be almost modern. In spite of the physical similarities

¹ The *Antagaḍa-Dasāo* and *Aṇuttarovavāiḍa-Dasāo*, tr. by Dr. L. D. Barnett, p. 15.

² The *Romantic Legend of Śākya Buddha*, tr. by Samuel Beal, p. 262.

³ The *Buddhacarita* or *Acts of The Buddha*, tr. by E. H. Johnston, Part II, p. 23.

⁴ *Jainasūtra*, tr. by Hermann Jacobi, Part I, p. 221.

mentioned above, women differ from men in other physical characteristics, some of which are described below in detail.

Contrary to the opinion expressed in the *Atthaśālinī*, Śrīharṣa, in his *Nāgānanda*, holds the view that the upper parts of the fair sex are much more developed than the lower ones. As for instance, the two feet are not sufficiently strong to bear the weight of the thighs, and these again in their turn are too weak to support the pressure of the weight of the hips or the buttocks. Likewise the heaving breast of the adolescent girl is too heavy for the waist to bear its brunt.¹ The adolescent girls in the full bloom of their youth possess dazzling loins,² triple folded waist,³ and the fuller developed buttocks.⁴ Not all the girls in their adolescence have bulky waists, and some among them possess slender waists.⁵ At this stage of physical development, their buttocks also undergo changes. These are heaved in their initial change,⁶ and reach further development in the next stage of

¹ Śrīharṣa, *Nāgānanda*, tr. by V. R. Nerurkar, Act III, v. 6, p. 25.

² *Ummagga Jātaka*, tr. by T. B. Yatawara, p. 202.

³ *Rājaśekhara*, *Karpūramañjarī*, tr. by C. R. Lanman, Act III, v. 19, p. 269.

⁴ *Ibid.*, Act II, v. 15, p. 250, v. 23, p. 251.

⁵ *Ummagga Jātaka*, p. 202.

⁶ *Rūpagoswāmī*, *Ujjvalanīlamanīḥ*, edited by Ram-narayana Vidyaratna, p. 441.

their growth, while in the final stage they expand to the fullest development in their full vigour of youth.¹ According to Rājaśekhara, in the final stage of development the buttocks of the adolescent girls get round² and become wheel-like.³

The breasts of the girl also pass through certain phases of development. In early adolescence, they jut out a little bit,⁴ in the next stage of development the breasts are clearly perceptible,⁵ and in the final stage of the growth the two breasts of the fair sex become very bulky,⁶ and at the age of sixteen these generally become hard like buds.⁷ Rājaśekhara, a ninth century scholar, poet and dramatist, in his famous Karpūramañjarī, maintains that the two breasts of the adolescent girls occupy the whole bosom,⁸ and these are developed almost into the shape of a tower.⁹

The eyes become restless¹⁰ in their perfection¹¹ in their adolescence. According to Rājaśekhara, the

¹ Rūpagoswāmī, *op. cit.*, p. 446.

² Rājaśekhara, Karpūramañjarī, Act II, v. 34, p. 256.

³ *Ibid.*, Act III, v. 19, p. 269.

⁴ Rūpagoswāmī, *op. cit.*, p. 442.

⁵ *Ibid.*, p. 444.

⁶ *Ibid.*, p. 446.

⁷ The Ummagga Jātaka, p. 202.

⁸ Rājaśekhara, Karpūramañjarī, Act III, v. 19, p. 269.

⁹ *Ibid.*, Act II, v. 33, p. 255.

¹⁰ Mammaṣa, Kāvya-prakāśa, tr. by Ganganath Jha, p. 64; Ujjvalanīlamanīḥ, p. 442; Ānandavṇḍāvana-campūḥ, p. 450 ; Karpūramañjarī, Act III, v. 16, p. 268.

¹¹ Karpūramañjarī, Act III, v. 16, p. 268.

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typical eyes of the youthful girls with large pupils resemble almonds.¹ Apparently these sensuous and vegetable similes, so outrageous today, were permitted and enjoyed by primitive people. The eyebrows are also indicative of love² in the girls in their youth. The cheek-bones of the young girls are also getting properly developed, much after the manner of the full-orbed moon. The following relevant extract will be found interesting : “The expanse of her cheeks is like to the full-orbed moon.”³ The lips are dazzling,⁴ teeth are beautiful,⁵ and hair on the head is profuse, possessed of long black hair with curl at the tip.⁶ Indian literatures, sacred and secular, are full of vivid descriptions of physical growth and beauty of the adolescent girls. In this connection Kālidāsa’s Kumārasambhavam deserves special mention. In this epic we get a glowing and charming description of the youthful goddess Pārvatī. The following quotation from the Ummagga Jātaka gives us a vivid description of the youth of Nandā Devī : “Her lips and loins are as dazzling as the plates of solid gold. Her speech is sweet and soothing and lovely, and her voice is like the voice of young swans.....The

¹ Karpūramañjarī, Act I, v. 32, p. 238.

² Kāvya prakāśa, p. 64 ; Prakṛtasūktaratnamālā, edited by Puraṇa Chandra Naḥar, p. 57.

³ Karpūramañjarī, Act I, v. 32, p. 238.

⁴ Ummagga Jātaka, p. 202.

⁵ *Ibid.*, loc. cit.

⁶ *Ibid.*, loc. cit.

sole of her foot is as red as if it was plastered with wax. Her eyes, which are like the eyes of young deer, are long, as if they were gone away to speak a secret to the ear; the pupils are round like the eyes of pigeons, and gleam with the five colours, and they surpass even the petals of blue lotus flower. Her lips are as red as ripe limbuwela fruit. She has beautiful teeth, like lines of small pieces of chalk set in the two portions of a gourd. She has limbs which dance like a well-grown kaluwel creeper. She has a slender waist. Her hair is a dark-green colour, very fine, long, and curled at the end. Her look is as pleasant as that of a young virgin deer. Her figure shines as brilliantly as a flame in winter, or is as pleasing to the eye of every man who sees her as is a flame during winter....Nandā Devī is possessed of the five especial beauties of a woman, *viz.*, beauty of skin, beauty of flesh, beauty of age, beauty of teeth, and beauty of bones. Her breasts are hard as those of a maiden of sixteen years."¹ Rūpa-goswāmī, the great Vaiṣṇava scholar and saint of the fifteenth century, describes in his *Ujjvalanīlamanīḥ* the various stages of development in the adolescent girls as follows: heaving breasts, restless eyes, smiling face and fickle mind are indicative of the dawn of adolescence in a girl. The following extract bears us out:—

¹ *Ummagga Jātaka*, p. 202.

“ Darodbhinnastanaṁ kiñciccaḷākṣaṁ manthara-
smitam

Manāgabhisphuradbhāvaṁ navya-
yauvanamucyate.”¹

The next higher stage in the development of physical growth of a girl is called vyakta yauvana or expressed youth. In this stage her breasts are perceptibly raised, forming three folds as it were in the centre when the body becomes brilliant. The relevant text runs :

“ Vakṣaḥ pravyakta-vakṣoṇaṁ madhyaṇca
subalitrāyam
Ujḡvalāṇi tathāṅgaṇi vyakte sphurati
yauvane.”²

In the final stage of the growth in an adolescent girl, her buttock expands, the centre of her bosom becomes narrow, the breasts become heavy, the limbs become bright and the thighs resemble banana plants. These physical traits manifest themselves in a girl in her full bloom. The point is clear from the following verse of Rūpa Goswāmī :

“nitambo vipulo madhyaṁ Kṛṣamaṅgaṁ
varadyuti
pīṇau kucāvūruyugmaṁ rambhābhaṁ
pūrṇayauvane.”³

¹ Rūpa Goswāmī, Ujḡvalanīlamāṇiḥ, v. 12, p. 442.

² *Ibid.*, v. 12, p. 444.

³ *Ibid.*, v. 14, p. 446.

We have no materials at our disposal revealing the physiological growth of the adolescents of both the sexes. The physical growth of girls in their early adolescence enhances their beauty. The Jaina canons—the Antagaḍa-Dasāo and Aṇuttarovavāiya-Dasāo,¹ and the Vivāgasuyam²—all ascribe exquisiteness of beauty in the growing adolescents of the fair sex due to the symmetrical formation of the limbs brought about by puberty. Abundance of materials relating to the point, mentioned above can be gathered from the literatures, both devotional and secular.

During this period of adolescence, emotional traits also manifest themselves in both the sexes. The Agnipurāṇam tells us of twelve emotional traits in the adolescents, especially of the fair sex. They are as follows: hāva, helā, śobhā, kānti, dipti, mādhyam, śouryam, prāgalbhyam, udāratā, sthairyam, gambhīratā, and bhāva.³ Dhanañjaya, a tenth century scholar tells us of twenty emotional traits in the adolescents of both the sexes of which the above mentioned ten traits save gāmbhīryam, (gravity) and śouryam (valour) are common.

¹ The Antagaḍa-Dasāo and Aṇuttarovavāiya Dasāo, tr. by L. D., Barnett, p. 15.

² Vivāgasuyam, tr. by V. J. Choksi, and M. C. Modi, p. 103.

³ Agnipurāṇam, edited by Manmatha Nath Dutta, Vol. II, p. 11248.

The following ten are the additional emotional traits which we learn from his famous *Daśarūpa*: *lilā*, *vilāsa*, *vicchitiḥ*, *vibhrama*, *kilakiñcita*, *moṭṭāyita*, *kuṭṭamita*, *bibbokaḥ*, *lalita* and *vihṛta*.¹ Another authority, *Viśvanāth Kavirāj*, a fifteenth century scholar in his *Sāhityadarpaṇa* tells us of twenty-eight emotional traits to be found in the adolescents. His twenty emotional traits agree with the ones given by *Dhanañjaya* in his *Daśarūpa*; and the eight additional traits given by him are as follows: *mada*, *tapana*, *mougdhyam*, *vikṣepa*, *kutūhala*, *hasitam*, *cakitam*, and *keli*.² *Rūpagoswāmī*, another authority of the fifteenth century agrees thoroughly with *Dhanañjaya* in his description of the twenty traits of the adolescents.³ Thus we see that *Dhanañjaya*, *Viśvanāth* and *Rūpagoswāmī*, all these authorities agree in the description of twenty emotional traits in the adolescents, the first ten being common with the *Agnipurāṇam* with the exception of *gāmbhīryam* (gravity) and *śouryam* (valour). Thus, from all the authorities mentioned above, we get a list of total thirty emotional traits in the adolescents. *Viśvanāth*, makes a critical

¹ *Dhanañjaya*, *Daśarūpa*, tr. by George, C. O. Haas, vs. 48-49, p. 59.

² *Viśvanātha Kavirāj*, *Sāhitya Darpaṇa*, edited by Prof. Gurunath Vidyanidhi, and revised by Kalipada Tarkacharya, v. 99, p. 99.

³ *Rūpagoswāmī*, *Ujjvalanīlamanīḥ*, pp. 496-97.

analysis of the twenty-eight of these traits thus :—first ten emotional traits are common in the adolescents of both the sexes and the rest are found only in the fair sex. He further tells us that the first three traits are āṅgaja (bodily), and are expressed by the adolescents by their eyes and brows. The next seven traits are ajatnaja which arise spontaneously and the remaining eighteen traits are natural among the fair sex.¹ Dhanañjaya and Rūpagoswāmī both agree as to the physical basis of bhāva (feeling), hāva (emotion), and helā (passion), whereas the remaining seventeen traits are regarded by them as of spontaneous origin.² In fact all these traits which are innate manifest themselves in adolescence.

Rūpagoswāmī in his Ujjvalanilamañiḥ, makes a critical analysis of the traits found in Śree Rādhā in her adolescence, into the following principal categories, physical, vocal, social intelligence, and erotic emotion. According to this authority the girls in their adolescence not only become graceful in appearance, but also sweet in voice, very sympathetic to their friends and courteous in their dealings with them. Thus these authorities on aesthetics are scientifically very exact and

¹ Viśvanātha Kavirāj, Sāhitya Darpaṇa, v. 99, p. 99. Ujjvalanilamañiḥ, pp. 496-97.

² Dhanañjaya, The Daśarūpa, tr. by George, C. O. Haas, para 48, p. 59; Ujjvalanilamañiḥ, p. 497.

The following ten are the additional emotional traits which we learn from his famous *Daśarūpa*: *līlā*, *vilāsa*, *vicchitiḥ*, *vibhrama*, *kilakiñcita*, *mottāyita*, *kutṭamita*, *bibbokaḥ*, *lalita* and *vihṛta*.¹ Another authority, *Viśvanāth Kavirāj*, a fifteenth century scholar in his *Sāhityadarpaṇa* tells us of twenty-eight emotional traits to be found in the adolescents. His twenty emotional traits agree with the ones given by *Dhanañjaya* in his *Daśarūpa*; and the eight additional traits given by him are as follows: *mada*, *tapana*, *mougdhyam*, *vikṣepa*, *kutūhala*, *hasitam*, *cakitam*, and *kelī*.² *Rūpagoswāmī*, another authority of the fifteenth century agrees thoroughly with *Dhanañjaya* in his description of the twenty traits of the adolescents.³ Thus we see that *Dhanañjaya*, *Viśvanāth* and *Rūpagoswāmī*, all these authorities agree in the description of twenty emotional traits in the adolescents, the first ten being common with the *Agnipurāṇam* with the exception of *gāmbhīryam* (gravity) and *śouryam* (valour). Thus, from all the authorities mentioned above, we get a list of total thirty emotional traits in the adolescents. *Viśvanāth*, makes a critical

¹ *Dhanañjaya*, *Daśarūpa*, tr. by George, C. O. Haas, vs. 48-49, p. 59.

² *Viśvanātha Kavirāj*, *Sāhitya Darpaṇa*, edited by Prof. Gurunath Vidyānidhi, and revised by Kalipada Tarkacharya, v. 99, p. 99.

³ *Rūpagoswāmī*, *Ujjvalanīlamanīḥ*, pp. 496-97.

analysis of the twenty-eight of these traits thus :—first ten emotional traits are common in the adolescents of both the sexes and the rest are found only in the fair sex. He further tells us that the first three traits are aṅgaja (bodily), and are expressed by the adolescents by their eyes and brows. The next seven traits are ajatnaja which arise spontaneously and the remaining eighteen traits are natural among the fair sex.¹ Dhanañjaya and Rūpagoswāmī both agree as to the physical basis of bhāva (feeling), hāva (emotion), and helā (passion), whereas the remaining seventeen traits are regarded by them as of spontaneous origin.² In fact all these traits which are innate manifest themselves in adolescence.

Rūpagoswāmī in his Ujjvalanilamañiḥ, makes a critical analysis of the traits found in Śree Rādhā in her adolescence, into the following principal categories, physical, vocal, social intelligence, and erotic emotion. According to this authority the girls in their adolescence not only become graceful in appearance, but also sweet in voice, very sympathetic to their friends and courteous in their dealings with them. Thus these authorities on aesthetics are scientifically very exact and

¹ Viśvanātha Kavirāj. Sāhitya Darpaṇa, v. 99, p. 99. Ujjvalanilamañiḥ, pp. 496-97.

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² Dhanañjaya, *The Daśarūpa*, tr. by George, C. O. Haas, para 48, p. 59; *Ujjvalanilamañiḥ*, p. 497.

thorough in their descriptions which are sensuous but not sensual. They were experts in their arts who knew full well how to appreciate and enjoy the beauties of life without being either intoxicated or ensnared by them. Some of these authorities like Rūpagoswāmī were ascetical devotees who sacrificed all the material interests of life at the altar of the pursuit of the truth divine. The Ujjvalanilamaṇiḥ describes the good traits in Śrī Rādhā in her adolescence in the following verse :—

“atha vṛndāvaneśvaryāḥ kīrttyante pravarā guṇāḥ
 madhureyaṁ navavayāścalāpāṅgojjvalasmitā
 cārusaubhāgyarekhāḍhya gandhonmādita-mādhavā
 saṅgitaprasarābhijñā ramyavāk narmapaṇḍitā
 vinītā karuṇāpūrṇā vidagdha pāṭavānvitā
 lajjāśilā sumaryādā dhairya-gāmbhīryaśālīṇī
 suvilāsā mahābhāva-paramotkarṣa-tarṣiṇī
 gokula-premavasati-jagacchreṇī asadyasāḥ
 gurvarpita-gurusnehā sakhī praṇayitā vāśā.”¹

Thus the facts of Nature were made to play their part even in the development of religious and philosophical thoughts.

According to the same authority these traits are inborn which manifest themselves only in adolescence; and in support of his view he cites the case of Śrī Rādhā in the following verses :

¹ Rūpagoswāmī, Ujjvalanilamaṇiḥ, p. 105.

“bālyadhwānta sakhe prayāhi tarasā
 rādhāvapurdvīpata
 stāruṇyadyumaṇeryadeṣa vijayārambhaḥ
 puro jṛmbhate
 kṛṣṇavyomni rucirdarottaralātā tārādyutau
 kāpyurāḥ
 pārvādrau susamonnatiḥ smitakalā paśyādya
 vaktrāmbuje.”¹

With this brief description of the physical and the emotional traits of the adolescent girls, let us now turn to further description of the emotional traits of youths of both the sexes.

We learn from Kalidāsa's Śakuntalā how Priyamvadā, Anasūyā, and Śakuntalā were in deep love with one another at the dawn of their adolescence. Both Priyamvadā and Anasūyā assisted Śakuntalā in all possible ways in her amatory advance to King Duṣyanta.² Bhavabhūti, a much later authority in his Mālati-Mādhava tells us how females were in deep love with each other resulting in an indissoluble tie of friendship. In early days the girls are bound together by the common tie of interest in physical activities such as running, jumping and playing. This familiarity in early girlhood matures into an inseparable tie of friendship almost approaching to love at the dawn of adolescence. Thus Madayan-tikā embracing Mālati remarks :

¹ Rūpagoswāmī, *op. cit.*, pp. 150-52.

² Śakuntalā, Act III, Verses, 15-19.

“My dearest friend, this is indeed delightful.
 One city saw our birth; our infant sports
 And opening youth have ever found us friends.”¹
 This mutual love of the adolescents is not limited to the fair sex only. It is extended to males as well in their puberty. The Buddhist source subscribes to the same view when it narrates the deep love between Upatissa and Kotila more popularly known as Sāriputra and Moggallāna. The following extract supports our view :

“Closely as cause and effect are bound together,
 So do two loving hearts entwine and live,
 Such is the power of love to join in one.
 Even as the lily lives upon and loves the water,
 Upatissa and Kotila likewise,
 These two joined by closest bond of love,
 If by necessity compelled to live apart,
 Were overcome by grief and aching heart.”²

The Kathākoṣa tells us of the incidents of love among the same sex.³

Kālidāsa in his Śakuntalā depicts the love of the heroine for King Duṣyanta. We all know how Śakuntalā was reared in an ideally spiritual environment under the immediate supervision of the nun Gotamī in the hermitage of the sage Kaṇva. Even

¹ Bhavabhūti, *Malati-Mādhava*, tr. by H. H. Wilson, Act IV, p. 43.

² The Romantic Legend of Sākya Buddha, pp. 324-25.

³ The Kathākoṣa, tr. by C. H. Tawney, p. 147.

in such an environment, sex-urge manifested itself in Śakuntalā¹ in her early adolescence. In some girls at the dawn of puberty the divine love manifests itself. Thus Pārvatī was under the influence of divine love when she, under painful austerities, worshipped lord Śiva to win Him as her husband.² In brief, according to Kālidāsa some girls in early adolescence fall in love with the members of the opposite sex out of sexual urge and some again out of divine love. But in most cases the lover is urged by sex-instinct in her advancement. During adolescence the emotion of love is very intense and it affects the whole body of the love-stricken youths—males and females. Thus a relevant text runs: "The galling intense passion of the heart freely circulates like poison, burns like smokeless fire blown (by the wind), afflicts every part of the body like a high fever."³ The extracts like "youth is like the rushing torrent of a mountain stream"⁴ and,

¹ Kālidāsa, Śakuntalā, tr. by Arthur, W. Ryder, Act III, pp. 29-30, 32.

² Kumārasambhavam, tr. by Ralph T. H. Griffith, Canto, V, pp. 58, 65.

³ Mammata, the Kāvya-prakāśa, tr. by Ganganath Jha, p. 172. Bhavabhūti, Mālatī-Mādhava, tr. by H. H. Wilson, Act I, p. 1621.

⁴ Vikrama's Adventures, part I, tr. by F. Edgerton, para 4, p. 220.

“..... ..The flow'ry bow is strung,
And ardent youth is reckless of the peril”¹

are indicative of the love-stricken state of the adolescents. At the dawn of adolescence, it is natural for the youth to love and to hoard riches and wealth. In a word, adolescence is the age of the problem of selecting life's companion and finding employment. These two are the chief occupations of a youth. The following extract supports our statement: 'In the dawn of youth when the body is in its perfect beauty, it is the occupation of youth to love, to long, to cherish....

To care for, love, and hold dear wealth, corn and goods of diverse kinds is the occupation of youth.² Kalidāsa was also conscious of this important psychological truth which he advocated in his *Śakuntalā* where Priyamvadā, in course of a conversation with Anasuyā expressed jokingly the hidden thought of the heroine of her ardent desire to be united with her husband like a moon-beam encircled round a tree.³

Youth is the best time for enjoyment—physical, aesthetic or intellectual. A well known passage of Bhāsa illustrative of the point is given below: “Cheti:—play on, play on, princess, let this

¹ Bhavabhūti, *Mālali-Mādhava*, Act I, p. 13.

² *Lalitavistara*, p. 237.

³ *Śakuntalā*, tr. by Sir William Jones, Act I, p. 9.

delightful time of youth be fully enjoyed."¹ Love for the same sex and for the opposite sex plays an important rôle in gang-spirit—the adolescents move about in gangs either in the company of their own sex or in the company of the opposite sex. The motive in either case is the enjoyment of their youth in sight-seeing, indulging in care-free movements and in merriment. Thus we learn in the *Prabandhakoṣa*, how the princess, Vasudattī, born of the serpent King, lord of Trouncaharaṇam in the subterranean region with Thāru, Vāru, Campakasenā, Vasantavallī, Mohamāyā, Madanamūrcchā, Rambhā, Vimalānanā, Tārā, Sārā, Caṇḍanavallī, Lakṣmī, Līlāvati and Kalāvati—her fourteen lady friends went on excursion into the beautiful garden in Kauśāmbī territory for indulging in youthful pranks.² We have on the other hand evidences to show how adolescents of both the sexes sometimes arrange excursion trips for merry-making and youthful indulgences. Thus we have on record, in the *Vinaya Text*, how a troop of thirty young friends of Uruvela with their young wives were indulging in youthful sports in the neighbouring bower of Kappāsika, where Lord Buddha himself was resting in course of his preaching mission to

¹ Bhāsa, *Svapna-Vāsavadattā*, tr. by S. Subba Rau, Act II, p. 14.

² Rājasekhara Sūri, *Prabandhakoṣa*, edited by Jina Vijaya, part I, p. 86.

Uruvilvā.¹ The Ceylonese Buddhist Text tells us a similar tale.² The Chinese Buddhist Text tells us that a company of thirty young men were sporting in the aforesaid garden not with their young wives but with their girl friends. The following appropriate text may be cited in support: "Just at this time there was a party of thirty young men enjoying themselves in this same wood, all of whom, save one, had a pleasant female companion as an associate. Then the others, seeing that one of their number was not accompanied by a companion, began to contrive how to find one for him, but without any success, till at last they got a common dancing girl to join herself to their company, and associate with the young man who was alone without a female friend. So they passed their time in singing and dancing, till night coming on, they gradually sank to rest, and were soon asleep."³ It is needless to multiply illustrations in support of our contention that the adolescents—males and females—are gangsters, rude, wild and gregarious.

¹ The Vinaya Text, tr. by I. W. Rhys Davids, and Hermann Oldenberg, Vol. I, pp. 116-17.

² Manual of Buddhism, tr. by Spence, R. Hardy, p. 188.

³ The Romantic Legend of Sākya Buddha, tr. by Samuel Beal, pp. 287-88; Dhammapada Commentary, tr. by Eugene Watson Burlingame, part II, p. 118.

Men differ among themselves in their sexual appetites. Men, 'when under the influence of love, become blind, and in the selection of their beloved they observe no restrictions as to age. Thus some men under the influence of the sexual urge fall in love with girls of tender age, some with young ladies, some with ladies of mature age and some again with elderly women.¹ Love has its ebb-tide and flow-tide—it is unsteady. We have already noticed, how love in its flow-tide permeates the whole body and in its ebb-tide it dies. "Love dies through absence."² Emotions which manifest at adolescence are unsteady—they have their rise and decline.³ The love of nature is manifest even in childhood when little children show intense liking for the moon. Thus runs an appropriate text :

“Aṅgulyagraṃ yathā bālaiścandraṃ gṛhṇanti
durmatih.”⁴

This habit of love for the moon is constant even in adolescence. The love of other phenomena of nature may also be noted in this connection.

¹ Buddhist Birth Stories, tr. by T. W. Rhys Davids, p. 203.

² Viṣṇuśarmā, Pañcatantra, tr. by A. W. Ryder, p. 60.

³ Kunda Kunda Ācārya. The Pravacanasāra, tr. by Barend Faddegon, p. 48.

⁴ The Laṅkāvatāra Sūtra, ed. by Bunyiu Nanjio, p. 353.

Every child, it will be no exaggeration to say, is a lover of nature: every child is a nature-philosopher. Hemacandra mentions lunar fancy in the adolescence of the fair sex during their pregnancy. Thus the text runs: "Because his mother had a pregnancy-whim for drinking the moon, while he was still in embryo, and because he was moon-colour, his father named him Candraprabhā."¹ The same author in his *Sthavirāvalicarita* refers to the same pregnancy-whim of the young expectant mother. The case is that of a daughter of the tamer of peacocks, who in her advanced stage of pregnancy was hankering to drink the moon. This being told to Cānakya by her relations, he satisfied her pregnancy-whim by making her drink the moon, reflected in the water of a pot. The relevant verse runs :

" mayūrapoṣakamahattarasya duhitustadā
abhūdāpannasattvāyāścandrapānāya dohadah
tatkuṭumbena kathitaścānakyaṃ sa dohadah
pūraṇīyaḥ kathamasāviti pṛṣṭo'vadacca saḥ."²

A young educated lady gifted with poetic genius in her adolescence finds beauty in the moon which supplies her with materials to write poems on that

¹ Hemacandra, *Triṣaṣṭīśālākāpuruṣacaritra*, Vol. II, pp. 317-18.

² Hemacandra, *Sthavirāvalicarita*, edited by Hermann Jacobi, verses 231-32, p. 235.

planetary body.¹ Thus fine natural poetry is associated with fine sentiments of the heart.

The maternal instinct is developed in girls at the dawn of their adolescence. In their girlhood, they are strongly guided by it in playing the rôle of mother and in dramatising the household activities. They are not serious about their domestic games. They caress their dolls as a mother would caress her child. Kālidāsa refers to this practice on the part of Pārvatī and her associates in *Kumārasambhavam*.² A text relevant to the point asserts: "The unmarried girls, residing in that place, proceeded to celebrate the marriage of their several pairs of dolls by placing their (the dolls) feet on the fringe of the stone-like disc of the full moon."³ Kathāsaritsagara also tells us how young girls look upon dolls as their own children "for to-day when she was playing with a doll and making believe it was a child, I said to her in fun."⁴ Thus little girls play the rôle of mother instinctively and are guided more by imagination than by actual reality. Over and above, they play with dolls for

¹ Rajaśekhara, *Karpūramañjarī*, Act III, V. 30, p. 274.

² Kālidāsa, *Kumārasambhavam*, tr. by Ralph T. H. Griffith, Canto I, p. 17.

³ Rāmāmātya's *Svaramelakalānidhi*, tr. by M. S. Ramaswami Aiyar, v. 18, pp. 43, 169.

⁴ Kathāsaritsāgara, Vol. 1, tr. by C. H. Tawney, p. 194, *Āditastaraṅgaḥ*, 24, *Taraṅgaḥ*, 2, v. 29.

amusement.¹ Maternal instinct and sensuous enjoyment were the basis of girls' activities in playing with the dolls. It is only in adolescence that the maternal instinct is predominant in them. Kālidāsa in his Śakuntalā and Kumārasambhavam refers to the manifestation of maternal love in Śakuntalā and Pārvatī when they reached puberty or adolescence. Śakuntalā, thus out of maternal love for the fawn at Kaṇva's āśrama, anointed ingudi oil at its face while bruised by the prick of kuśa grass.² Pārvatī also in her adolescence fed the wild deer with grain with her own hands, and they in their turn amply repaid the maternal love by the implicit confidence they placed upon her.³

Over and above, their maternal love for the fauna, the adolescent ladies also show their motherly and sisterly love for the wild floras. Kālidāsa notices this adolescent trait in his Kumārasambhavam and Śakuntalā in the following extracts :

“ The trees that blossomed on that lonely mount
She watered daily from the neighbouring fount :
If she had been their nursing mother, she
Could not have tended them more carefully,”⁴

¹ Kathāsaritsāgara, Vol. I, p. 257.

² Kālidāsa, Śakuntalā, tr. by Arthur W. Ryder, Act IV, p. 47.

³ Kālidāsa, Kumārasambhavam, Ralph T. H. Griffith, Canto V, p. 58.

⁴ *Ibid.*, Canto V, p. 58.

and again " Śakuntalā : Oh, it is n't Father's bidding so much. I feel like a real sister to them. (She waters the trees)." ¹ The maternal instinct in the adolescent ladies, unlike the one in their girlhood leaves a permanent impression upon their mind; and Kālidāsa was fully aware of this fact when he narrates how Pārvatī could not forget her maternal love for the wild floras and the faunas long after the birth of Kārttikeya.² Love looks through the eyes and not through the mind : it is intensely emotional and not rational.

Let us now turn to the dark side of the shield in the following paragraph before we turn again to the description of good traits in the adolescents. The adolescent youths specially males are also fond of violence. Cruelty to birds and insects is noticed in the boys in their erect stage, when their restlessness is turned into a criminal trait. Then they are given to violence and crimes. This criminal tendency is not only confined to the members of the lowest strata in society, but also it is extended to the members of the aristocratic class. We have on record in the Buddhist literature how the cruelty trait in Girika, manifested in his boyhood, developed into a criminal trait in his adolescence. Thus Girika, a weaver by caste was cruel to birds and

¹ Śakuntalā, tr. by Arthur W. Ryder, Act I, pp.1, 10, Act IV, p. 46.

² Kumārasambhavam, tr. by Ralph T. H. Griffith, Canto V, p. 58.

insects in his boyhood, and in youth he even killed his own parents.¹ We learn from *Kathāsaritsāgara* how young princes freeing themselves from restraint, slew their guards.² These princes must not be too young but must undoubtedly be young adolescents. Youth is not only characterised by full physical vigour but also by love for adventure, when they out of adventurous spirit, roam about far and near. The following quotation from *Saundaranandam* supports our statement. "Then in course of time the seer passed away and those heroes roamed about in their unbridled youth, as unrestrained as elephants untamed by goads."³ Religious trait is also manifest in some young adolescence.⁴ The adolescent girls are timid, bashful,⁵ and weak, though possessed of stout hearts.⁶ The following extract from the *Prākṛta-Sūktaratnamālā* depicts clearly the characteristics of the girls in their adolescence. "Shyness, pride, down-cast looks and timidity, to an excess, are the

¹ *Legends of Indian Buddhism*, tr. by Winifred Stephens, pp. 31-32.

² *Kathāsaritsāgara*, tr. by C. H. Tawny, Vol. I, p. 255. *Āditastaraṅgaḥ* 29, *Taraṅgaḥ* 2, vs. 152-53.

³ *Aśvaghōṣa, The Saundaranandam*, tr. by E. H. Johnston. Canto I, p. 4, verse, 34.

⁴ *Lalitavistara*, tr. by Rajendralal Mitra, pp. 192-94.

⁵ *Śrī Harṣa, Nāgānanda*, tr. by V. R. Nerurkar, Acts I and IV, pp. 6, 36.

⁶ *The Svapnavāsavadattā*, Act IV, V, 8, p. 32.

characteristics of the fair sex and not of men of pure morals.''¹ They are also fickle-minded.²

Social traits are developed in man in his adolescence. The restlessness is given away to sobriety during this period. The fair sex in their adolescence learn manners and etiquette and are extremely social in their dealings with others. This sociability is common to males and females alike in their adolescence. The Ādipurāṇa supports our view wherein is mentioned that modesty is the ornament for youth, renunciation for old age and learning for man. The relevant text runs :

“vinayo hi yauvanasya tyāgo vṛddhasya bhūṣaṇam
vidyā ca naralokasya tathā sādhuvaçaḥ param.”³

The social intelligence in the adolescent g rls is developed to such an extent that their dealings with others are admirably commendable. Cool temperament, modesty, sweet-voice and courtesy—these traits in the young ladies earn for them universal respect and admiration.⁴ Mammaṭa in his Kāvya-prakāśa holds that “The luxury of youth alone

¹ Prākṛta-Sūktaratnamālā, tr. by Puranchand Nahar, v. 24, p. 11.

² Deśika, Saṅkalpa-Sūryodayaḥ, tr. by K. Narayanacharya, D. Raghunathswamy Iyengar, Act I, p. 34.

³ Ādipurāṇa edited by Oriental Religious Publication Society, adh. I, v. 7, p. 12.

⁴ Bhāsa, Svapnavāsavadattā, tr. by S. Subba Rau, Act IV, p. 30.

teaches a woman grace and elegance.”¹ The sense of self-respect—a trait, not known to the infants and children, manifests itself in adolescence. The text runs: “Like a young babe, I may live happily devoid of all sense of self-respect.”² Young women are conscious of their sense of self-respect, fortified by their heaving breasts as it were. “Even yet, this feeling of self-respect, wishes to stay in the hearts of women, fortified by the hill-like breasts, woe is to me!”³ The adolescent youths are not only courteous, awaken to their sense of dignity, but are also conscious of their social obligation. Sense of self-sacrifice is also developed in them and they are sympathetic to others, and even at the risk of their own life they try to mitigate the sufferings of others. “Youth, lovely form, mind devoted to the wants of others; this accumulation of virtues, that befit righteousness, has been in its proper place.”⁴ We have thus far discussed the physical and the emotional growths of the adolescents of both the sexes. We propose to discuss their mental growth in our chapter on “Intelligence”. Suffice it to say here that the intelligence of the growing child grows gradually when individual differences with reference to intelligence become perceptible in adolescence.

¹ Mammaṭa, *The Kāvya-prakāśa*, tr. by Ganganath Jha, p. 16.

² Śrī Meppāthur Bhaṭṭathiripada, *Nārāyaṇīyam*, ed. by P. N. Menon, verse 7, p. 942.

³ Mammaṭa, *The Kāvya-prakāśa*, p. 130.

⁴ *Journal of The Buddhist Text Society of India*, edited by Sarat Chandra Das, Vol. III, part I, 1893, p. 7.

CHAPTER III

SENSATIONS

One of the cultural glories of ancient India was to propound the theory of education through sense-perceptions—a glory of immense pedagogical significance. Like John Locke, the ancient Hindus believed in the origin of knowledge through sense-perceptions. We have elaborate and authoritative discussions of the topics in innumerable texts, of which we can refer only to a few typical ones here and of the most typical of the authoritative text, there is the Sāṅkhya Aphorism of Kapila, one of acutest thinkers of the world. Among a part of topics he discusses the theory of knowledge very methodically and elaborately. According to Kapila the organs of sight, hearing, touch, taste, and smell are the gates of our knowledge.¹ According to other authorities sense-organs are six in number, including the mind.² Our sensory organs are highly specialised, each carrying particular news through it. Thus colour is perceptible through the eyes, sound

¹ Kapila, *The Sāṅkhya Aphorisms*, tr. by James, R. Ballantyne, p. 201.

² *The Atharvaveda*, tr. by William Dwight Whitney, Vol. II, verse 5, p. 912.

through the ears, smell through the nose, taste through the tongue, touch through the skin, and the senses of judgment through the mind. The following verses from *Suvarṇaprabhā* support our above view :

“cakṣurindriyaṃ rūpameteṣu dhāvati śrotendriyaṃ
śavdavicāreṇa
ghrāṇendriyaṃ gandhavicitrahāri jihvendriyaṃ
nityaṃ raseṣu dhāvati
kāyendriyaṃ sparśagato dhāvati manendriyaṃ
dharmavicāreṇa ca
saḍindriyāṇīti paraspareṇa svakaṃ svakaṃ
visayamabhidhāvati.”¹

Gotama holds, identical views in his Nyāyasūtra where he mentions that we derive particular knowledge of things through perceptions arising from specific sensory organs. Perception of colour is derived through our eyes. In order to have the perception of colour both the eyes and the colour must be present: a blind man cannot have colour-perception even when the colour is present. Likewise, our perception of colour is not possible if the stimulus (*i.e.*, the colour) is not present before our eyes. The case is similar with the olfactory and other sensory organs. Each of the sensory organs responds to its particular

¹ *Suvarṇaprabhā*, edited by Sarat Chandra Das and Pandit Sarat Chandra Sastri, p. 30.

stimulus. "That is, the Sense-organs are restricted in the scope of things (perceived by their instrumentality); e. g., colour is not perceived without the Visual Organ, while it is perceived when the Visual Organ is there; and when between two things it is found that one appears while the other exists, and does not appear when the other does not exist—it follows that one is of (belongs to) the other; hence the perception of Colour must be regarded as belonging to the Visual Organ; that is, it is the Visual Organ that perceives the Colour. Similarly is the case of the Olfactory and other organs. Thus then, inasmuch as it is the Sense-organs that perceive their respective objects, these (and not anything else) should be regarded as the intelligent Perceiver; for the simple reason that the presence and absence of the perception of objects are found to be in strict accordance with the presence and absence of the Sense-organs."¹ Nāgārjuna, the famous Buddhist monk also believes in the acquisition of knowledge through the six sensory organs. His view will be patent from the following verses :

“ darśanam śravaṇam ghrāṇam rasanam
sparsanam manah
indriyāṇi śaḍeteṣāṃ draṣṭavyādini gocarah

¹ Nyāya Sūtra, tr. by Gaṅganath Jha, Bhāṣya to Sūtra, 2, p. 254.

vyākhyātaṁ śravaṇaṁ ghrāṇaṁ rasanāṁ
 sparśanaṁ manah
 darśanenaiva jāniyācchrotrīśrotavyakāḍica.”¹

Really speaking, the authorities quoted above regarded the five senses to be the gates of our knowledge of the outside world. These senses strictly confine themselves to their own particular spheres and do not overlap each other. “they do not mutually overstep their own particular spheres.”² Pure sensation is vague and hazy; and our knowledge of the outside world following upon immediate sense-activity is beset with confusion. To have a correct knowledge of the world around us, the mind must be active, and we must perceive things, that is, boundary line for the things perceived must be set resulting in perception followed by imagination. “If it is so, then sense-perception becomes a (real) source of our knowledge only in combination with a (constructed)

¹ Nāgārjuna, *Mūlamadhyamakakārikā*, published by Bibliotheca Buddhica, IV, Chap. III, vs. 1, 2, pp. 113, 120; Manuscript Remains of Buddhist Literature Found in Eastern Turkestan, tr. by Rudolf, A. F., Höernle p. 112;

Śāntaraksita, *Tattvasaṁgraha*, tr. by Ganganath Jha, Vol. I, p. 18;

Buddhacarita, tr. by E. H., Johnston, Part II, V. 67, p. 211.

² Manuscript Remains of Buddhist Literature Found in Eastern Turkestan, p. 112.

judgment, and not (in its genuine form of) a pure (sensation).'¹

According to Śāntarakṣita, six different sensations arising out of six senses function simultaneously, though two sensations from a single sensory organ at a time are not possible. According to this authority, though each single sensation is intervened by five other sensations, these appear to be closely connected and unseparable from one another. He supports his thesis by citing the examples of the dancing of an actress in a dancing party, where one can see her dance, hear her music, taste the camphor and other spices, smell the sweet fragrance of a flower nearby, feel the air from the fan and at the same time can think of making her a gift. This is a very graphic and convincing example illustrating the simultaneous operations of different senses. Briefly speaking, senses of sight, hearing, taste, smell, touch, and mind can all be active simultaneously.² The Abhidhamma Piṭaka upholds the view that it is possible for two sensations of different senses to rise simultaneously. Thus the text runs: "It is not right to maintain that two sensations cannot exist at the same time, because two sensations of the same sense really cannot, but not two sensations

¹ T. H. Stcherbatsky, *Buddhist Logic*, Vol. II, p. 45.

² Śāntarakṣita, *Tattvasaṃgraha*, tr. by Ganganath Jha, Vol. I, p. 631.

of two different senses. It has been established (in the Abhidharma) that six (different sensations) can exist simultaneously. Therefore (there is no impossibility that) two sensations (of different origins), of different senses, should arise simultaneously."¹ The Jaina scholars, however, hold different views about the simultaneous activity of all the senses. According to Kunda Kunda Ācārya, an eminent Jaina saint, sensory organs,—touch, taste, smell, sight, and sound do not function simultaneously. They cannot function simultaneously because of an inability to concentrate our attention on diverse sensory objects at once. Apparently there is a solid ground in support of the Jaina contention. The text runs: "The substrata of touch, taste, smell and colour, moreover sound, are material-objects, fit for being grasped by the sense-organs. But even they are not grasped by the sense-organs simultaneously; for the requisite energy due to destructive subsidence is not present."² Each of the senses has decisive advantages and disadvantages in our mental life or cognition of things. Thus in gaining our knowledge of hot substance, knowledge through sense of touch has a decided advantage over the verbal knowledge, carried through

¹ T. H. Stcherbatsky, *Buddhist Logic*, Vol. II, pp. 315-16.

² Kunda Kunda Ācārya, *The Pravacanasāra*, tr. by Barend Faddegon. pp. 36-37.

the auditory sense. Similarly, the knowledge of colour and taste cannot be as accurate and perfect as the knowledge, derived through the senses of sight and taste. We quote below in support of our statement: "The cognition of the Hot thing brought about by the Senses is clear and distinct,—not so the cognition that is brought about by the word 'hot'; people whose Visual, Gustatory and Olfactory organs have been impaired do not cognise the Colour and Taste, etc., of things on the hearing of the mere name—'mātulinga' (Citron), for instance; while people whose eyes are intact have a clear perception of those through that sense-organ. This has been thus declared—'The man who has been burnt by fire has the idea of having been burnt, on the contact of fire,—which idea is entirely different from the idea of burning arising on the utterance of the word burn.'¹ The senses are restricted to present stimuli and not to past stimuli or events.²

The senses have physiological basis of origin, and like the modern psychologists the ancient Hindus ascribed each sense-activity to a particular sensory organ. According to Suśruta, the great authority on the Hindu Medical Science, human organism is covered with a net-work of arteries which are of vital importance, not only in the

¹ Śāntarakṣita, *The Tattvasaṃgraha*, tr. by Ganganath Jha, Chap. XVI, Com. to Sūtra, 879, Vol. I, p. 475,

² *Buddhist Logic*, Vol. II, p. 279.

physiological functions of our organism but also in our mental life.¹ We cannot afford to go into a detailed discussion of the topics here. Suffice it for us to mention that our sense-activities are vitally connected with the proper functioning of these arteries. These arteries have their roots branching out into different directions in the body. A text from the Suśruta in our support is inserted below : “The ten up-coursing Dhamanis (nerves) perform such specific functions of the body, as sound, touch, taste, sight, smell, inspiration, sighing, yawning, sneezing, laughter, speech, and weeping, etc., and tend to maintain the integrity of the body.”²

CHARACTERISTICS OF SENSATIONS

Like the modern western psychologists, their Hindu counterparts described the following identical characteristics of sensations : (i) Sensations have extensity, volume or area. Sense-activity is not restricted to particular part of our body but it is widely diffused over our body by the specific sensory organ. The following quotation supports our view : “As a matter of fact, Odour (Colour, Taste, Touch and Sound) have their exact extensions precisely determined through their respective communities (or genera); so that

¹ *Suśrutasaṁhitā*, tr. by Kaviraj Kunjalal Bhishagratna, Vol. II, pp. 192-93.

² *Ibid.*, pp. 209-10,

the perceptions of these can be rightly regarded as indicating the existence of distinct apprehending instruments, only when it is found that they (the perceptions) are such as are not brought about by the same (or similar) instruments."¹ (ii) Secondly, each sensation has its location. Thus the senses of touch, sight, smell, taste and hearing have their location respectively in the body, the pupil of the eye, the nose, the tongue and the cavity of the ear. The following quotation will substantiate our statement: "The location also of the Sense-organs are five-fold: (1) The Tactile Organ, which is indicated by the perception of Touch, has its location throughout the body; (2) the Visual Organ, which, as issuing out of the body, is indicated by the perception of Colour, has its location in the pupil of the Eye; (3) the Olfactory organ has its location in the nose; (4) the Gustatory organ has its location in the tongue; (5) the Auditory Organ has its location in the cavity of the Ear;—all this being proved by the fact that the five organs have their existence indicated by the perceptions of Odour, Taste, Colour, Touch, and Sound."² Sensations have their magnitude or intensity. This property is conditioned by the object or stimulus of the senses. Thus the text runs: "shape" stands for the exact extent of magnitude...the Olfactory organ: the

¹ Gotama, *Nyāyasūtra*, tr. by Ganganath Jha, Vol. III, p. 164.

² *Ibid.*, p. 167.

Gustatory and the Tactile Organs have their magnitude restricted to their respective substrata—says the Bhāṣya. The Visual Organ, issuing out of the Eye-socket, pervades over the object; and is thus of larger magnitude (than the aforesaid three organs). The Auditory Organ, which is only Ākāśa, is restricted in its operations by the limitations of its location; Ākāśa becomes connected with (located in) the Ear-cavity, which is found under the influence of Merit and Demerit, and which (on that account) becomes the means of apprehension of Sounds, agreeable, disagreeable or indifferent; and what renders Sound audible is the only Ākāśa thus connected with the Ear-cavity.’¹

Finally, sensations have the property of specific quality because each of the senses gives us a correct knowledge of the property of the material objects around us. As for example our olfactory organ gives us a knowledge of the various kinds of odour of the object around us. Sense of taste gives us a knowledge, such as sweet, sour, bitter, of the object around us. Sense of touch gives us a correct tactual knowledge such as hardness or softness of the object around us. These sensory organs have specific quality in that they convey to us a correct knowledge of the property of the things around us which enables us to distinguish one thing from the

¹ Gotama, Nyāyasūtra, tr. by Ganganath Jha, Vol. III, p. 169.

other by our appropriate sensory organs. The following relevant extract bears us out: "The specific qualities of the Rudimentary Substances, are Odour, Taste, Colour, Touch, and Sound; these are called 'specific' because they serve to specify (and distinguish the substances from one another); e.g., Earth is distinguished from Water and the rest by the presence of Odour; water is distinguished from the rest by the presence of Taste, and so forth. According to both parties, a restriction is met with, in the case of the external substances Earth, etc., as to the manifestation of their specific qualities; and there is similar restriction as to Odour etc., being manifested by the Olfactory and other Organs respectively. Hence from the fact that there is perception of the specific qualities of the Rudimentary Substances we conclude that the sense-organs have their source in those substances."¹ Our brief discussion reveals that the sensations have extensity, location, intensity (magnitude) and specific qualities as special characteristics; whereas the modern European Psychologists have added 'durability' as the fifth quality to our list. With this brief discussion on sensations in general, let us now devote our attention to the next chapter to the further discussions of each sense perception with special reference to its padagogical significance.

¹ Gotama, Nyāyasūtra, Vol. III, p. 171.

CHAPTER IV

SENSE PERCEPTIONS

In our discussions on sensations we have shown how the senses are the gates of our knowledge. Pure sensations, however, do not convey to us a correct knowledge of our surroundings: knowledge without perception is impossible. Perfection of knowledge—sensual and verbal is possible only when the mind is active, and we must perceive things, that is, the boundary line for the things perceived, must be set resulting in perception, followed by imagination. The following extract supports our view: "If it is so, then sense-perception becomes a (real) source of our knowledge only in combination with a (constructed) judgment, and not (in its genuine form of) a pure (sensation)".¹ Thus perception marks a distinct step in advance in the acquisition of knowledge. This was a common knowledge with the Buddhist Psychologists who anticipated some of the outstanding contributions of their modern counterparts.

The commentator of Nāgārjuna's *Treatise on Relativity* defines perception to be an "object

¹ T. H. Stcherbatsky. *Buddhist Logic*, Vol. II, p. 45.

which has been approached by our senses.”¹ He further states that “sense-perception is not a knowledge about the senses; it is a knowledge about the object of (the senses).”² Here we get a very lucid and a thoroughly sound statement of the essentials of perceptions. The Hindu authorities held similar views. Thus according to Nyāyasūtra of Gotama when our sensory knowledge of an outside object becomes specific, free from error, it is called perception.³ Moreover, the proper functioning of each sensory organ upon a particular object is also called perception. The sensory organs are said to have functioned properly when they convey to us a correct knowledge of a sensory object resulting in its recognition.⁴ The Nyāyasūtra classifies perceptions into five distinct divisions, such as, visual perception, tactual perception, auditory perception, olfactory perception and flavour perception.⁵ Each sensory organ gives us a particular kind of

¹ Candrakīrti, *The Clear Worded : A Comment Upon Nāgārjuna's Treatise On Relativity*, tr. by T. H. Stcherbatsky, p. 159.

² *Ibid.*, loc. cit.

³ Nyāyasūtra of Gotama, tr. by MM. Satish Chandra Vidyabhusana, para IV, p. 3.

⁴ *Ibid.*, tr. by Ganganath Jha, Vol. I, p. 378.

⁵ *Ibid.*, Vol. II, p. 40 ; *Ibid.*, ed. 1939, Bhāṣya to Sūtra, 60, pp. 317-18.

sense perception peculiar to it. Thus our olfactory organ gives us the cognition of smell, the visual organ the visual cognition, the gustatory organ the gustatory cognition. Evidently, the contact between the sense-organs and the objects of sense is vitally necessary for the acquisition of knowledge. An almost identical view is upheld by Śāntarakṣita according to whom colour is cognisable only through the sense of sight and not through other sensory organs and so forth.¹

In addition to its specific nature, perception deals with the object or objects, present before our senses.² Bhavabhūti, an eighth century poet subscribes to the above view when he writes in his *Mālati Mādhava*, that perception portrays present object. The following extract substantiates our statement :

“ Perception dimly pictures present objects,
And past perceptions fade from recollection ! ”³

Moreover, sensory organs are the seats of sense-perceptions though they change with every objects. Sense-perceptions are named differently according to

¹ Śāntarakṣita, *Tattvasaṃgraha*, tr. by Ganganath Jha, Vol. I, p. 599.

² *The Clear Worded: A Comment Upon Nāgārjuna's Treatise on Relativity*, p. 159.

³ Bhavabhūti, *Mālati Mādhava*, tr. by H. H. Wilson, Act I, p. 12.

the different sensory organs,¹ as was noted before in our classifications of sense-perceptions. Thus a good deal of sound psychology can be gleaned from an unexpected quarter.

Nemicandra Siddhānta Cakravartī mentions Darśana and Jñāna to be the two characteristics of Upayoga.² According to Brahma-Deva, the commentator of Davva-Saṃgaha, in darśana we do not get a thorough and accurate knowledge of an object—our knowledge of it is too general and imperfect. This is the first stage of our knowledge of the sensual object. Our initial knowledge is hazy. Before we get a detailed knowledge of an object, we simply see it or hear of it or become aware of it in a too general way without going into the details of it. This darśana stage or general knowledge of an object must necessarily precede a detailed knowledge of it. This is an important item of analytical knowledge which the ancient psychologists of India thoroughly mastered. Without experiencing this stage, knowledge of a thing is impossible. In Jñāna, the second stage of our knowledge, we receive a detailed knowledge of an object.³ According to Siddhānta Cakravartī,

¹ The Clear Worded: A Comment Upon Nāgārjuna's Treatise on Relativity, p. 160.

² Nemicandra Siddhānta Cakravartī, Davvasaṃgaha, tr. by Saratchandra Ghosal, p. 9.

³ *Ibid.*, p. 9.

Matī-jñāna is divided into *Avagraha*, *Īhā*, *Avāya*, and *Dhāraṇā*—the four stages, identical with the classification of memory.¹ *Avagraha*, as remarked before, results in a general knowledge of an object brought into contact with our sensory organ. This contact stimulates our sensory nerve resulting in our consciousness.² The *Īhā* or the second stage gives us a detailed knowledge of an object: we compare and contrast the similarities and differences of a particular object with other objects before we become aware of the detailed knowledge of them.³ In the *Avāya* or the third stage of our knowledge we try to particularize specifically the details, we sought to know in the second stage. In the second stage we merely seek to know the details, whereas in the third stage we try to ascertain definitely these particulars or detailed knowledge.⁴ In the *Dhāraṇā* or in the fourth stage we try to have a permanent impression in our mind of the definite particulars of the objects resulting in memory,⁵ which has four distinct stages of development. With these brief discussions of sense-perceptions let us now turn to their application to teaching and learning processes.

¹ Nemicandra Siddhānta Cakravartī, *op. cit.*, p. 14.

² *Ibid.*, p. 14.

³ *Ibid.*, pp. 14-15.

⁴ *Ibid.*, p. 15.

⁵ *Ibid.*, p. 15.

Perfect knowledge, however, is not possible through one particular sense-perception. It is dependent upon more than one sense-perceptions. First let us discuss the influence of the perceptions of sight, hearing and sound in the education of a child. Elaborate discussions of the phenomenon of sight in its anatomical aspect is to be found in *Suśruta Saṃhitā*, the *Garuḍa-purāṇa* and in the *Aṃśu Bodhinī Sāstra*. The contributions of many other authorities have to be utilized for a full and adequate discussions of the pedagogical significance of visual perceptions.

The *Tattvārthadhigama Sūtra*, a Jaina Scripture tells us of three distinct types of knowledge. Śruti or scriptural knowledge is preceded by sensitive knowledge and it is followed by verbal knowledge. The demarcation between these two types of knowledge is too narrow, for, in both the cases the word uttered is preceded by sensitive knowledge, with this difference that the scriptural knowledge is to be associated with our previous experience or knowledge where in the case of the latter, words uttered or written are merely to be heard or seen. That is, the perceptions of hearing and sight assist us in deriving the knowledge of the word uttered or written, whereas in the case of Śruti or Scriptural knowledge, the knowledge of the word uttered is not only to be received with the perception of hearing, but also it is to be associated with the thing seen or heard in the past. This

point has been worked out with great subtleties by the ancients. Briefly speaking, Śruta or Scriptural knowledge deals with the past, and the verbal knowledge deals with the present ; and in both the cases, the perceptions of hearing and sight assist us in deriving the knowledge of the outside world. Thus the Tattvārthadhigama Sūtra observes : "A man hears the word ' ship, ' this is sensitive-knowledge. The sound raises the qualities of a ship in his mind, as he may have read or heard of them, this is scriptural knowledge.

Verbal knowledge is derived from words which are composed of letters (Akṣara), spoken or written ; as when the eye sees the written word or the ear hears the spoken word ' soul '. The seeing and hearing give us merely sensitive knowledge (Mati-Jñāna)."¹ Verbal knowledge plays, as it is bound to play, an important part in the education of the child and in that of the immature man, who is, also a child in a sense. Non-verbal scriptural knowledge is derived from sense-activities ; and it is not reduced to words—written or oral.² Verbal scriptural knowledge produced by words and the non-verbal scriptural knowledge produced by signs will receive our attention before we turn to the discussion of knowledge through other sense-acti-

¹ Śrī Urmāsvāmī Ācārya, Tattvārthadhigama Sūtra, tr. by J. L. Jaini, Vol. II, p. 28.

² *Ibid.*, p. 28.

vities. The auditory and the optical senses are the basis of verbal-scriptural knowledge whereas our knowledge of non-verbal scriptures is derived solely through the perception of sight. It is a historical and biological fact that in the acquisition of knowledge, sense-perception precedes books as the medium, that is, we receive instruction from our teachers first through sense-perceptions, next through books. A relevant text runs: "Śruta or Scriptural knowledge (is always) preceded by sensitive knowledge."¹ According to Kumārila Bhaṭṭa, however, sense-perception is the basis of right knowledge: "Thus then, for all the means of right knowledge, it is necessary to be preceded by sense-perception."² Let us now discuss the importance of the perception of sight in the acquisition of verbal knowledge.

We first propose to discuss the importance of the phenomenon of optical perception in relation to the learning of the three R's reading, writing, and arithmetic. Among the ancient Hindus it was the practice for the beginner to begin with writing. Writing in ancient India was undoubtedly taught through pictures or visual perception. We get clear evidence of it in the Suttavibhaṅga of the Vinaya Text where is

¹ Tattvārthadhigama Sūtra, Vol. II, p. 28.

² Kumārila Bhaṭṭa, Ślokavārtika, tr. by Ganganath Jha, V. 173, pp. 205-06.

described how Assajipunabbasukā from Kitāgiri among other complaints made to Lord Buddha at Śrāvastī, mentioned that the monks were playing with letters. The following passage from the Vinaya Text bears us out: "akkharikāya pi kiṇanti."¹ This proves that there must have been in vogue in ancient India the practice of playing with letters. The education through games is based on a sound knowledge of the psychology of human nature: it satisfies the fondness for sense activities and motor activities. In taking note of this fact, the educators of ancient India demonstrated a keen sense of judgment for which they were always noted. In this novel method the senses of sight, hearing and touch must be active in conveying to the children a correct idea about alphabets. In the elementary process of learning which engaged the attention of the young pupils only in writing the alphabets, the senses of hearing and touch must be active. Thus according to the ancient Hindus the initial stage in learning the alphabets is purely sensitive.

In the next higher stage of learning when the children learn how to pronounce the alphabets, the sense of hearing plays its role. At this stage the two afore-mentioned senses are also active in the recognition of the alphabets by

¹ The Vinaya-Piṭṭakam, edited by Hermann Oldenberg. The Sutta-vibhaṅga, XIII. I. I. 3, Vol. III, p. 180.

the children. In pronouncing the alphabets the role of the tongue in its diverse positions in the mouth is prominent. Here with the tongue the young scholars do not taste but touch the various parts in the mouth as a preliminary step to correct the pronunciation of a word. The following extract from the *Aṣṭādhyāyī* of Pāṇinī supports our claim : "Spr̥ṣtam or complete contact of the organs. The twenty-five letters from ka to ma belong to this class. In pronouncing these there is a complete contact of the root of the tongue with the various places, such as throat, palate, dome of the palate, teeth and lip."¹

Perception is a requisite not only in writing but also in learning the meaning of the words. Thus little children learn the meaning of words by constant hearing and seeing of what is going on around them. They always hear the adults directing others to carry some behest for them, and by constant observations of the nature of the command and the things actually done, they master the import of the words by imitation and in the next higher stages of their physical and mental development when their power of association is developed in them, they learn the significance of words by association or comparison. Thus, when they hear from a forester that a mythian (Gabaya)

¹ *Aṣṭādhyāyī* of Pāṇinī, tr. by Śrīś Chandra Basu, Books I and II, p. 11.

is just a cow, they grasp the meaning of Gabaya that it is a wild animal resembling a cow.¹

Finally in arithmetical calculation also, the senses of sight, sound, and touch are playing an important role. It was the custom among the ancient Hindus at the initial stage of learning to learn calculation from concrete objects. This point was emphasized by Nāgasena, an eminent Buddhist monk in the debate with king Milinda in the following words: "In the art of calculating by using the joints of the fingers as signs of marks, in the art of arithmetic, pure and simple, in the art of estimating the probable yield of growing crops, and in the art of writing, O King, the beginner is clumsy. But after a certain time with attention and practice he becomes expert."² Nāgārjuna, a noted Buddhist Monk and writer mentions the practice of calculating in the dust.³ Kālidāsa, an eminent Sanskrit dramatist in his *Śakuntalā* and *Kumārasambhavam* advocates a similar process of learning calculation from concrete things.⁴ Here not only the senses of touch and

¹ Vidyādhara, *The Ekāvālī*, edited by Pranasankar Trivedi, p. 384.

² *The Questions of King Milinda*, tr. by T. W. Rhys Davids, Part I, pp. 91-92.

³ Lu—Trub (Nāgārjuna). *She-Rab-Dong-Bu*, tr. by W. L. Campbell, v. 215, p. 108.

⁴ Kālidāsa, *Śakuntalā*, tr. by Sir William Jones, Act I, p. 18 ; Act VI, pp. 104-05 ; Act VII, p. 125.

sight but also the sense of sound or auditory sense are emphasized as factors of knowledge.¹

The knowledge of language is also possible through the senses of sight, hearing, and touch though the latter plays a specially conspicuous part in educating the blind. The study of the Vedas by the scholars is preceded by the pattern reading of the preceptor or the teacher.² This practice in secular studies, especially in language is universally followed in the schools of today. After the pattern reading given by the teacher the pupils try to form correct perception of the word and its component parts—the letters, before grasping the entire sentence of the Vedic scripture. Briefly speaking, the method followed in ancient Vedic school is analytic-synthetic, based on sense-perceptions, arising from the senses of sight and sound. That is, the teacher first of all reads the entire sentence, then the entire paragraph before the Vedic scholars reduce them into their component parts, *viz.*, the sentence into words and words into alphabets with a view to forming clear sense-perception of the words and sentences as a prelude to their proper understanding. The following passage from the Śloka Vārtika supports the view discussed: “At the time of studying

¹ Kumārasambhavam, published by the Society for the Resuscitation of Indian Literature, Canto XI, p. 101.

² Kumārila Bhaṭṭa, Śloka-Vārttika, tr. by Ganganath Jha, p. 55.

(getting up) a certain book, one has recourse chiefly to the ascertainment (and remembrance) of words and letters, apart (from the sentences composed of them)"¹ and we quote again: "in the case of acquiring the Veda, we find that learning consists (of a gradual process) of learning a letter, then a word, a sentence, and so on, and yet all these processes have a common result, in the shape of an acquirement of the Veda."²

The senses of sight and touch, however, function in communicating our thoughts to one another through signs. Vātsyāyana styles this science "akṣara-muṣṭikā-kathanam"³ and includes it as one of the sixty-four arts. The practice, now followed in the education of the dumb was much in vogue in ancient India. This symbolic method of communication through the senses of sight and touch reached the status of a distinct branch of science here in this country in the days of yore—a technique now followed in the education of the dumb all over the progressive countries. The science was cultivated by the scholars, the monks, the military men, the spies and even the dancers.

¹ Kumārila Bhaṭṭa, *Śloka-Vārtika*, tr. by Ganganath Jha, V. 146, pp. 509-10.

² *Ibid.*, p. 273; *Tantravārtika*, tr. by Ganganath Jha, Vol. II, pp. 1054-55, Jaimini's *Mīmāṃsā Darśana*, Adh. III. Pāda II, adhi. I.

³ Vātsyāyana, *Kāmasāstra*, tr. by Mahesh Chandra Pal, p. 85.

Ancient Indian literature abounds with references of such symbolic method of communicating ideas. The Ummagga Jātaka tells us beyond doubt how an ascetic in the royal palace while retiring to his cell happened to meet Bōsat, the court paṇḍit on his way to attend the King. The ascetic just to test the wisdom of the paṇḍit asked him some questions through signs which the paṇḍit answered by a similar process to the entire satisfaction of the ascetic. The following extract supports the above point : “ Now it happened one day that, after his meals at the palace, the Ascetic was on his way to his cell, when he met the Bōsat in the palace-yard coming to attend upon the king. The Great One saluted the Ascetic, and stood on one side. Then the Ascetic thought within himself, ‘ This Paṇḍit is wise; therefore I will test his wisdom....But to interpret a meaning conveyed by signs is a difficult thing. So I will make signs to him with my hands, and in that way question him.’ Then he looked the Bōsat in the face, and opened out his hand. Now if it be asked what his meaning was, it was this : He was thinking to himself, ‘ what does the king give this paṇḍit, whom he has brought hither from his country ? Does he give him riches with a free hand and maintain him well ? ’ So, to convey his meaning, he opened out his hand; and the Bōsat replied by closing his fist. If it be asked what he meant to convey—he intended to express that the king had brought him

there, in pursuance of his promise to the king, and that as one does not part with what he grasps in his hand, so the king gave him nothing. The Ascetic, finding that the Bōsat had divined his meaning, stretched out his hand and rubbed his head, meaning to convey : ‘ Then, if you are dissatisfied, why not become an ascetic like myself ? ’ This, too, was not lost upon the Bōsat, and in his turn he rubbed his belly, as who should say, ‘ There are many bellies that I must fill, and therefore I cannot become an ascetic.’¹ Thus the phrase “ closing his fist ” and the sentences like “ rubbed his head ” and “ rubbed his belly,” in the above quotation indicate the rôle of the sense of touch in the mute communication which is to be interpreted by the sense of sight. But the sense of sound must have had its part in learning the symbolic interpretation by the beginners in terms of language. Nandikeśvara in his *Abhinayadarpaṇa*, tells us of hand-language, vogue among the dancers of India—a fact we propose to deal in our ninth chapter.

At a later date, Māgha in his *Śiśupālavadham* tells us of the same custom as prevalent in the epic age; when the Kuru troops maddened with joy, blew the dundubhi deafening the ears of the people standing nearby, who, when they could no longer finish their intended talks, began communicating the

¹ *Ummagga Jātaka*, pp. 222-23.

half-finished conversation by the signs, given by the hands. This proves how human thought can be communicated to each other by signs even though the sense of hearing may be deafened for the present. We quote below from Māgha's Śīsupālavadham a relevant verse in support of our contention :

“ rabhasapravṛtta-kurucakradundubhidhvanibhir-
janasya badhirīkṛtaśruteḥ
samavādi vaktṛbhirabhiṣṭasāṅkathāprakṛtārtha-
śeṣamatha hastasāñjñayā.”¹

The knowledge of fine arts such as painting, music and dancing is gained through the senses of sight, hearing and touch. In painting optical and tactual senses only are primarily essential while other senses play subordinate rôle. The sense of sight, according to the ancient Indian writers has as its objects five colours²: white, yellow, green, red and black.³ Another Jaina treatise adds 'blue' and 'pink'⁴ colours to the above list. Mention is made of "painting a temple with the five colours" and "decorating them and making

¹ Māgha, Śīsupālavadham, edited by Haridas Siddhantavagis, Canto XIII, v. 3, p. 533.

² Kumārila Bhaṭṭa, Tantravārtika, tr. by Ganganath Jha, Vol. II, Adh. III, pāda II, adhi. I, p. 1054.

³ Kunda Kunda Ācārya, Niyamasāra, tr. by Uggar Jain p. 15.

⁴ Umāswāmī Ācārya, Tattvārthādhigama Sūtra, tr. by J. L. Jaini, chap. II, Sūtra 20, p. 66.

them gay with five colours" in the *Vicitrakarṇikā-vadānadhṛta*.¹ Kumārila Bhaṭṭa, a much later authority in his *Tantravārttika* subscribes to the above view.² The Buddha accepted the universally popular view that colour is the object of light. In painting representative imagination plays a vitally important part. While colour and light are the proper objects of the sense of sight, in painting the eyes must possess the power of discriminating the various shades of colour. Thus the text runs: "a painter, without eyes (for the discrimination of fine points or niceties) fails to paint well, i.e., to make a good picture,"³ In painting, a painter draws a picture from the image of real objects of the immediate neighbourhood or of the beloved one. When the object disappears from sight, a painter makes a vivid picture of the object in his mind, and draws picture out of his mental vision. That the senses of sight and touch are of essential necessity can be judged from the passage quoted below from *Mālatī-Mādhava*: "The flood of tears again and again obstructs the function of my eyes; my body becomes paralysed owing to the dulness brought on by my picturing her in

¹ *Vicitrakarṇikāvadānadhṛta*, tr. by Hans Jorjensen, p. 298.

² Kumārila Bhaṭṭa, *Tantravārttika*, tr. by Ganganath Jha, Vol. II, p. 1054.

³ *Caraka-Saṃhitā*, Vol. II, p. 1909.

my mind; and when I proceed to paint her, this my hand, at once perspiring, has its fingers excessively shaking on account of incessant tremor. What can I do? Still I am trying. (Finishing the drawing after a long time and shows it)."¹ Almost identical thought is expressed by Kālidāsa in his *Vikramorvaśīyam*.² The process of drawing a picture was due as much to the pictorial imagination as to actual observation with the Hindu painters. A concrete example is supplied by the text of the *Ratnāvalī*: "Sus.—It is cleverly done, but there wants a figure to complete it. Let me have it, and I will give the god his bride (Takes the paper and draws).

Sāg.—(Angrily) Hey, *Susāṃgatā*! What mean you? You have sketched my likeness."³ In painting the power of observing the surrounding objects, richness of imagination,⁴ and ardent love of adolescence are essential—a theme elaborately discussed in our *Jaina System of Education*.⁵

¹ Bhavabhūti, *Mālatī-Mādhava*, tr. by M. R. Kale, Act. I, p. 15.

² Kālidāsa, *Vikramorvaśīyam*, tr. by Sir William Jones Act. II, p. 26.

³ Śrī Harṣa, *Ratnāvalī*, tr. by H. H. Wilson, Act II, p. 18.

⁴ Kālidāsa, *Śakuntalā*, tr. by Sir William Jones, Act VI, pp. 106, 108.

⁵ D. C. Das Gupta, *Jaina System of Education*, p. 55.

In music the senses of sight, hearing and touch are of vital necessity. Especially the auditory sense must be very keen and acute, capable of discriminating the seven grades of musical tones and pitches which are as follows : ṣaḍja, ṛṣabha, gāndhāra, madhyama, pañcama, dhaivata and niṣāda.¹ Music, when properly played upon by experts with all their marvellous skill making its letters perfectly distinct and audible, causes immense pleasure to our auditory sense. It can then also be understood and repeated by the tamed parrots. That is, musical instruments when properly played upon by musicians, skilled in the arts, send forth perfectly correct and distinct musical notes which cast spells upon human beings and parrots alike. We quote from Śrī Harṣa's Naiṣadha-Caritam an extract sustaining our contention : " The lyres then chanted forth songs of eulogy acting like honey on the ears of that couple, with the sequence of their letters perfectly distinct in such wise that the tame parrot of Damayanti, the Rati of the earth, repeated all the songs thus, showering delight."² Not only the sense of hearing but

¹ Tattvārthādhigama-sūtra, Vol. II, chap. II, Sūtra 20, pp. 66-67.

² Śrī Harṣa, Naiṣadhacaritam, edited by Haridas Siddhantavagis, Canto. XXI, Verse 115, also tr. by Krishnakanta Handiqui, p. 314. The corresponding verse in Handiqui is 130.

also the sense of sight plays its rôle in discriminating the seven grades of musical tones, as is evident from Māgha's Śiśupālavadhāṃ, where the poet distinctly mentions how the Brahmins, versed in the Sāmaveda, each began singing in harmonious melody by pointing out the distinctions among the seven grades of musical tones with the signal made by the hand. The following extract supports the above view :

“saptabhedakarakalpitasvaram sāma sāmā-
vidasaṅgamujjagau
tatra sūnṛtagiraśca sūrayaḥ puṇyamṛgyajuṣa-
madhyagīṣata.”¹

In making signal with the hand in discriminating musical tones the sense of touch is also implied, for, in directing the musical rhythm sometimes appropriate musical tones are produced with two fingers and with strokes of palms as is universal even to-day. In playing on musical instruments such as flutes, vīṇā and other stringed instruments, the strokes of the fingers are essential. We learn from the Śiśupālavadhāṃ how the lord Nārada while descending upon the earth resounded the cord of the vīṇā with the strokes of his finger.² In testing if the musical

¹ Māgha, Śiśupālavadhāṃ, edited by Haridas Siddhantavāgis, Canto XIV, V. 21, p. 581.

² *Ibid.*, Canto. I, V. 9, p. 7.

instruments are properly tuned, the sense of touch especially of fingers and the auditory sense, trained in the discrimination of musical tones and pitches are essential. Here though the senses of touch and hearing are not specifically mentioned they are yet implied. The extract quoted below from Harṣa's Priyadarśikā substantiates the above view : "Āraṇyakā : Kāñcanamālā, hand me [the lute] Ghoṣavatī, so that I may examine its strings. (Kāñcanamālā gives her the lute). Āraṇyakā puts the lute on her lap and runs over (the strings)"¹ That the sense of touch, especially trained for musical instruments, plays an important rôle in the marvellous display of musical skill and efficiency can be gathered from the following extract : "Like a female elephant, the lyre, resting close to the mighty king, sent up a high pitched note melodious with the Nishada tune; while it vibrated at its top to the accompaniment of quarter tones, and underwent a wondrous play of the hand."²

DANCING

In dancing, an important branch of fine art, the senses of touch, sight and hearing play an important rôle. From Bharata's Nāṭya Śāstra we learn

¹ Śrī Harṣa, Priyadarśikā, tr. by G. K. Nariman, A. V. Williams Jackson and Charles J. Ogden, Act, III, p. 53.

² Śrī Harṣa, Naiṣadhacaritam, tr. by Krishnakanta Handiqui, Canto. XXI, verse 128, p. 313. The corresponding verse in Siddhantavagis's edition is 113,

that the co-ordination of the hands and the feet are the basis of the art of dancing. This co-ordination is styled by Bharata as *karaṇa* and the combination of the *karaṇas* constitutes *Aṅgahāras* in dance. The following extract bears us out: "O, Dvijas, I shall describe the performance of these with the *karaṇas*, and also how the actors are to combine the movements of the hands and feet in the several *Aṅgahāras* and *Karaṇas*; *Aṅgahāras* have their origin in *Karaṇas*. I shall describe these (*karaṇas*). A *karaṇa* in dance is the co-ordination of the movements of the hands and feet."¹ According to Nandikeśvara, in the correct interpretation of the significance of dance the three bodily gestures—*aṅga*, *pratyāṅga* and *upāṅga*—all must be active. In the *Abhinaya darpaṇa* it is mentioned how all the limbs—head, hands, armpit, sides, waist, feet, and neck—must all be employed in interpreting music.²

Music is also interpreted by shoulders, shoulder-blades, arms, back, stomach, thighs and calves, wrist, knees and elbows.³ The emotional traits of the dancers are directed by eyes, eye-lids, pupils, cheeks, nose, jaws, hips,

¹ *Tāṇḍava Lakṣaṇam*, tr. by Bijayeti Venkata Narayanaswami Naidu, Pasupuleti Srinivasulu Naidu and Ongole Venkata Rangayya Pantulu, vs. 28-30, p. 19.

² Nandikeśvara, *Abhinaya Darpaṇa*, tr. by Ananda Coomaraswami and Gopala Krishnayya Duggirala, p. 18.

³ *Ibid.*, p. 18.

teeth, tongue, chin, heel, ankle, fingers, toes and palms.¹ Physical activities of hands, shoulders and feet co-ordinate together in the correct interpretation of music and the activities of the eyes in directing the emotions of the mind. In these physical activities of the dancers, the senses of sight, hearing, and touch play a significant part in communicating thoughts and ideas to others. Nandikeśvara's description of the courses in dance in accompaniment with music suggests the sensory basis of musical performance: "The song should be sustained in the throat; its meaning must be shown by the hands; the mood (bhāva) must be shown by the glances; rhythm (tāla) is marked by the feet. For wherever the hand moves, there the glances follow; where the glances go, the mind follows; where the mind goes, the mood follows; where the mood goes, there is the flavour (rasa)."² From Bharata's Nāṭya Śāstra we also get evidences of the sensory basis of dancing. In the Élakāridita Karaṇa the dancer shoots upwards pointing his legs high up in the sky and drops down while bending and twisting the body.³ This karaṇa is especially beneficial to the development of the senses and the motor activities in boyhood. The senses of touch and sight are at the basis of Maṇḍala Svastika Karaṇa, which includes the placement of

¹ Abhinaya Darpaṇa, *loc. cit.*

² *Ibid.*, p. 17.

³ Tāṇḍava Lakṣaṇam, verse 158, K. 97, p. 46.

the hands in Svastika together with the palms and fingers directed towards the audience or the object in front and upward, forming a symmetrical position in Maṇḍala Sthāna.¹ Not only the senses of sight and touch but also the sense of hearing function in dancing. Over and above, the dancers must possess keen sense of discriminating pitches and tones, so essential in music in order to dance in accompaniment of musical instruments. Bharata advocated dancing in harmony with musical instruments. The extract quoted below supplements our statement : "Instrumental music, which is well harmonised, well-timed, enjoyable, and attuned to the Nṛtta should be used in Tāṇḍava by those skilled in the use of such instruments."² We may further illustrate our case from other karaṇas but it is needless to multiply our case. In learning music and dancing, the pupils imitate the teachers through the senses of hearing and sight.³

PHYSICAL EDUCATION

Physical education is preparatory to military training, and, it has common elements in the initial stage of training. Consequently physical and military courses are identical in the beginning only to differ in the advanced stages of training. Both these courses are offered through the senses of

¹ Tāṇḍava Lakṣaṇam, verse 68, K. 8, p. 23.

² *Ibid.*, v. 285, p. 59.

³ Nyāyasūtra, tr. by Ganganath Jha, p. 216.

touch, sight, and sound as will be evident from our discussion of some of the above courses.

In physical education the senses of touch and sight are of paramount importance. The sense of touch as noted before in chapter III, has its location all over the body, *i.e.*, the sensory nerves are diffused all over the body and respond to outside stimuli. "The body-sense makes for things amenable to touch."¹ Physical education is mainly concerned with the body-sense or sense of touch and things. We learn of it from the physical exercises of king Andhaga-Vaṇhī of Dvārakā at the royal gymnasium and the process in the exercises includes leaping, limbtwisting, wrestling, ointment and rubbing of the body by the experts. The following extract from the Antagaḍa-Dasāo and Aṇuttarovavāiṇya-Dasāo bears us out: "Then king Andhaga-Vaṇhī at break of day rose up from his couch, and stepped down from the dais. He went to the place where the gymnasium was, and entered into the gymnasium. There he wearied, tired, and forspent himself with manifold exercises of energy, leaping, limbtwisting, wrestling, and turning; then he was smeared with anointing stuffs of a hundred and a thousand distillations, fragrant oils and the like, comforting, inspiring,

¹ Manuscript Remains of Buddhist Literature found in Eastern Turkestan, tr. by Rudolf, A. F. Höernle, Vol. I, para. 6, p. 112.

gladdening, strengthening, rejoicing all the organs and limbs; then on the oiling-skin he was rubbed down by men with tender and delicate palms on perfect hands and feet, men skilful, dexterous, accomplished, clever, wise, possessed of cunning art, masters of the modes of anointing, rubbing, and turning, with fourfold rubbing pleasant to the bones, to the flesh, to the skin, and to the hair."¹

In military education the senses of touch, sight and hearing play a significant rôle. In archery the use of these three senses is of essential importance. Skill in archery requires a keen eye-sight. The aim of the archer reaches perfection through constant practice beginning with the large objects coming down to gradually smaller and smaller ones. The following extract bears us out: "Then the venerable Ānanda saw a number of Licchavi youths in the gymnasium, making practice at archery, shooting even at a distance through a very small keyhole, and splitting an arrow, shot after shot, without ever a miss."² Kālidāsa was also conscious of the rôle of the senses of sight and touch in archery and he writes in his famous *Kumārasambhavam* as follows: "Kāma, watching the fit time for his arrow, desirous of entering like a grasshopper the mouth of the fire, fixing his aim at Hara in the

¹ The *Antagaḍa-Dasāo* and *Aṇuttarovavāiya-Dasāo*, Chap. 1, p. 20.

² The *Book of The Kindred Sayings*, tr. by F. L. Woodward, Part V, p. 381.

presence of Umā, touched the bow string."¹ Over and above, the sense of sound also plays an essential rôle in archery, and we get clear evidence of it in the Ādikāṇḍa of the Rāmāyaṇa wherein is stated the accidental killing of Sindhu, son of a hermit by king Daśaratha who followed the direction of a sound made, when the former was pouring water in the jar.² Hemacandra, the great Jaina scholar of the 12th century A.D., writes of the importance of the senses of sight and sound in archery. According to him perfect efficiency in archery demands constant practice in it with the help of these two senses. He describes the demonstration of prince Sagara of Vinita (Oudh) before his teacher Ajita-swāmī in the following language: "He exhibited to the Lord the shooting of a doll on a wheel, shooting an invisible object by sound, the shooting at a target in water, the shooting of a clay-ball on a wheel with arrows."³ We learn from the Mahābhārata also, how Arjuna pierced a fish in a revolving wheel by shooting an arrow from a look at its shadow in the water to win the hand of Draupadī.⁴

¹ Kālidāsa, Kumārasambhavam, published by the Society for the Resuscitation of Indian Literature, Canto III, p. 25.

² The Rāmāyaṇa, tr. by Panchanan Tarkaratna, Ayodhyā Kāṇḍa, Canto 62, v. 4, p. 288.

³ Hemacandra, Triṣaṣṭīśālākāpuruṣacaritra, Vol. II, p. 71.

⁴ The Mahābhārata, edited by Haridas Siddhantavagis, Ādiparva, Canto 181, v. 21.

In the formation of battle arrays the sense of hearing plays a conspicuous part, and it was the universal custom in ancient India to give signal to the army at the time of its formation by the sound of musical instrument—a bugle.¹

Sciences such as medicine, astronomy, psychology, mineralogy, manufacture of artificial gems, etc., are learnt through the senses of sight and touch. Let us now make a brief review of the influence of the senses in learning the sciences.

MEDICINE

Caraka, the famous Indian physician of the first century A.D., prescribes the qualification of the prospective candidates for the medical profession as follows: He must possess all his limbs in perfect state of healthy condition free from physical defects. Moreover, the senses—sight, hearing, touch, taste, smell and the mind must all be in a perfect condition so as to function properly. Caraka knew full well that the medical practitioners must be physically active and mentally sound and their senses must be active in learning medical science.² We learn from the Tibetan source how Jivaka was directed by Ātreya, the well-known professor of surgery at the famous University of Taxila to make a first hand observation of patients by personal attendance on them.³

¹ *Sukraniti*, tr. by Binay Kumar Sarker, v. 162, p. 158.

² *Caraka Saṃhitā*, Vol. I, p. 549.

³ *Kah Gyur*, tr. by F. Anton Von Schiefner and tr. from German into English by W. R. S. Ralston, pp. 94-95.

Suśruta, another famous physician stresses this important point when he refers to the "demonstration of surgery and medicine"¹ in his description of the necessary qualifications of a medical practitioner. Dr. Montessori, famous Italian educationist, believes that medical practitioners with trained senses prove to be efficient.²

ASTRONOMY

It is a practical science dealing with the movements of the stars and other heavenly luminaries. Hence its knowledge is acquired by a study of the stars and heavenly luminaries through observations, supplemented by appropriate books, recording the results of observations made by previous astronomers.³ According to Śrī Harṣa the science of Astronomy deals with the description of the life of stars.⁴

PSYCHOLOGY

The ancient Hindus were thoroughly conversant with the fundamentals of psychology, and they freely applied its principles in the study of the behaviour of men of all ranks from the monarch to the criminal. Psychology is a practical science: it grew out of the constant

¹ Suśruta Saṁhitā, Vol. I, p. 306.

² Dr. Maria Montessori, *The Montessori Method*, tr. by Anne E. George, p. 219.

³ Śukranīti, verses 88-89, p. 154.

⁴ Śrī Harṣa, *The Naiṣadhacarita*, Canto XXII, p. 331.

observations made by the experts of the inner thoughts, feelings and movements of man. The following passage from Śukranīti supports the above statement : "The skilful men should note the pleasure and displeasure of the king, by studying his inward feelings, outward expressions and movements."¹ Śukrācārya classifies offences into three distinct categories, such as mental, physical and vocal. The mental offence which has to do with secret plot, evil designs, etc., is to be discovered by a study of the physiognomy, feelings and emotions of the culprit. The physical and the vocal offences are to be studied by observations of the actions, the physiognomy, feelings and the emotions of the culprit. We quote again the same authority as follows : "One should know the mental offences by studying the eyes, mouth, expressions and feelings, etc., the physical by the actions and the vocal by harsh words, and those arising from intercourse by studying the companionships;"² Briefly speaking, psychology—general and experimental—deals with the observations of inward feelings, outward signs and actions of man—normal or abnormal. This observation of emotions and outward behaviour of a man is impossible without the sense of sight. Hence psychological observation of a man or irrational animals is based on the optical sense.

¹ Śukranīti, verses 472-73, p. 86.

² *Ibid.*, verses 140-43, pp. 132-33.

According to Śukrācārya the appraiser appraises gold as to its purity by its lightness, heaviness, colour and sound.¹ These attributes of gold can only be judged by the senses of touch, sight and sound. Cāṇakya advocates the method of testing gold and precious stones by four different ways such as hammering, signifying the use of the sense of sound, cutting signifying the sense of sight and scratching and rubbing, signifying the senses of sight and touch.² That is, Cāṇakya believes in the appraisal of gold and precious stones by the senses of sight, sound and touch. The Garuḍa Purāṇam mentions the testing of gold by the sense of touch.³ According to Śukrācārya, "weight, lustre, colour, extent, receptacle, and shape,"⁴ are the determinants of both the quality and the value of gems. Briefly speaking, according to this authority the property of gem is judged by the senses of touch and sight. Richness of ores is tested by the senses of touch, sight, smell and taste.⁵

In manual works such as the manufacture of gems, jewelleries, metal work, engraving bracelets (69), lac ornaments (77), wax-works (78), leaf-

¹ Śukraniti, verses 106-09, p. 65.

² Cāṇakya, Arthasāstra, tr. by Dr. R. Shamasastri, p. 110.

³ The Garuḍa Purāṇam, edited by Manmathanath Datta, Pūrva-khaṇḍam, Canto 112, v. 3, p. 331.

⁴ Śukraniti, verses 107-08, p. 142.

⁵ Cāṇakya, Arthasāstra, p. 95.

cutting (81), shampooing (47), making flower garlands (46), needle work (79) and basket work¹ (80), and leather work², the senses of touch and sight are very necessary.

SENSE OF TASTE

Though the sense of taste has no pedagogical significance in the conventional sense of the term yet, its influence on the preservation of health and life is great. It is of especial value in the preparation of diet on sound scientific basis. Suśruta makes six classifications of the sense of taste, such as pleasant, acid, saline, pungent, bitter and astringent, each with a specific function of its own.³ Of these, pleasant taste preserves health. The Jaina source mentions five types of tastes⁴ with the exception of saline taste. Śukrācārya, however, upholds the view of Suśruta regarding the classification of the sense of taste, and the best dish according to him must contain

¹ Ardhamāgadhi Reader, edited by Banarsi Das Jain, p. 102 (69) ; The Antagaḍa-Dasāo and Anuttarovavāiya-Dasāo, tr. by L. D. Barnett, p. 30 ; Lalitavistara, tr. by Dr. Rajendralal Mitra, p. 214, (46), (47), (77), (78), (79), (80), (81).

² The Laws of Manu, tr. by G. P. Bühler, 163, v. 218.

³ The Suśrutasaṃhitā, Vol. I, pp. 385-86.

⁴ Kunda-Kunda Ācārya, Niyamasāra, tr. by Uggar Jain, p. 15 ; Jaina sūtra, tr. by Hermann Jacobi, Part II, p. 209 ; Tattvārthādhigamasūtra, tr. by J. L. Jaini, Vol. II, Chap. ii, sūtra 20, p. 66, Chap. viii, sūtra 11, pp. 165-66.

all these six tastes.¹ He regards cooking as an art, scientifically prepared by an admixture of diverse tastes.² Cooking in ancient India was regarded as an art, requiring technical skill from the cook, possessed of a keen sense of taste, and knowledge of the properties or vitamins of food stuffs. The kitchen superintendent was conversant with the food stuffs³ and their properties. A female cook was also educated.⁴ The sense of taste then is of especial importance in domestic science or cooking, and the expert must possess keen sense of taste in the preparation of diet.

Finally, the sense of smell is of three kinds: agreeable, disagreeable and indifferent.⁵ The Jaina authorities classify it to be two, *viz.*, fragrance (Sugandha) and bad odour (durgandha).⁶ Thus the penetrating fragrance of the sweet scent of lotus charms the sense of smell.⁷

¹ Śukranīti, v. 226, p. III.

² *Ibid.*, v. 143, p. 157.

³ *Ibid.*, verses 315-16, p. 80.

⁴ Merutuṅga Ācārya, Prabandhacintāmaṇi, tr. by C. H. Tawney, p. 63.

⁵ Gotama, Nyāyasūtra, tr. by Ganganath Jha, Vol. III, Vārtika 3-1-55, p. 163.

⁶ Tattvārthādhigamaśūtra, Vol. II, Chap. ii, sūtra 20, p. 66; Nemicandra Siddhāntacakravartī, Davva Saṅgaha, p. 23.

⁷ Śrī Harṣa, Priyadarśikā, tr. by G. K. Nariman, A. V. Williams Jackson, and Charles J. Ogden, Act. II, verse 33, p. 27.

This brief discussion of sensations and perceptions reveals that the ancient Hindus and their Buddhist and Jaina compatriots knew full well that our knowledge arises through sense-perceptions. The sense-perceptions must not be distorted if we are to receive correct knowledge in all the sciences altogether eighteen in number and the arts through our senses of hearing, sight, touch, taste and smell. According to Cāṇakya the sensory organs assist us in gaining a knowledge of the sciences not only when we have clear-cut perceptions of them arising from appropriate senses. Our knowledge of these sciences is defective and vague if perceptions about them are not properly formed. According to this authority the sole aim of all the sciences is to restrain the sensory organs or refine and correct the sense-perception. The following text bears us out : "Absence of discrepancy (avipratipatti) in perception of sound, touch, colour, flavour, and scent by means of the ear, the skin, the eyes, the tongue, and the nose, is what is meant by the restraint of the organs of sense. Strict observance of the percepts of sciences also means the same; for the sole aim of all the sciences is nothing but restraint of the organs of sense."¹

From this chapter we get a clear idea of the masterly manner in which themes of sensation

¹ Arthaśāstra, p. 12

and perception were handled by the authorities in ancient India. The Hindus and their cognates—the Buddhists and the Jainas all made valuable contributions to our theme and they emphasised the importance of sense-perceptions in the education of pupils. Our study reveals the special importance of the senses of sight, touch and sound in our mental life, especially in the teaching process in the school.

CHAPTER V

IMAGINATION

The ancient Hindu educators, like their colleagues in modern Europe and America, realised full well the importance of the part played by imagination in the development of a child's mental life. They knew equally well that our knowledge of the internal world is due not directly to the senses, but to the senses as well as to the intermediate stages of perception and imagination. A number of authoritative texts give us valuable information on this head. Aśvaghoṣa, a recognised authority asserts that the senses stick to their objects through imagination. "The senses, even though in activity, do not adhere to their objects, so long as imaginations about the latter are not conceived in the mind."¹ If the senses cannot function without imagination, there must be as many types of imaginations as the senses. Each sense must carry an image, peculiar to itself, by coming into contact with an outside stimulus or stimuli. According to the Māṇḍukyopaniṣad, the lasting cognition of things in our mind, derived through sensory organs, is imagination. According to this authority the elements of memory and cognition are

¹ Aśvaghoṣa, *The Saundarananda*, tr. by E. H. Johnston, Canto XIII, Verse 49, p. 76.

vital in imagination.¹ Śāntarakṣita in his *Tattvasaṃgraha* tells us how in an imaginary vision we talk of something as if it were present before our eyes, though actually the real thing is not there. The thing imagined, was not in existence before, and the qualifications or connotations, ascribed to the imaginary thing are all the products of imagination. The author illustrates the point by referring to the practices of the artists who generally ascribe good qualities of purely imaginary nature, such as bravery to the picture drawn.² Evidently, the reproductive, and not the productive imagination is in operation here. We may definitely assert that the sensory organs are instrumental in giving us an image of things actually perceived; but in some cases the real image undergoes some change through subjective interpretation. Images may, then, briefly be classified as genuine and creative.

Though of sensory origin, imagination sometimes leads us astray from realities resulting in fancy or illusion. A genuine imagination must be a faithful copy of real things, perceived through the senses; and if divorced from the realities, it results in illusion. The following extract will lend support to our contention: "As regards the 'illusory' form of things, it is a mere product of the art of

¹ *Māṇḍukyopaniṣad*, tr. by Nikhilananda Swami, p. 116.

² Śāntarakṣita, *Tattvasaṃgraha*, tr. by Ganganath Jha Vol. I, Chap. XIII, com. to sūtras 785-86, pp. 432-33.

Imagination ; it consists in mere 'Idea,' and is not an external object. People regard it as an 'external thing,' because they are unable to distinguish between what they see and what they imagine, and hence they regard the form cognised as external.'"¹

Imagination is of vital importance in our mental life. According to Bhavabhūti, men of superior intelligence and of rare genius possess rich imagination as well as the capacity for clear expression and interpretation. He says: "Fertility of imagination, melody of expression, and richness of meaning, are the indications of learning and of genius.'"²

We have elsewhere noticed the phenomenon of sympathy with the suffering humanity displayed by adolescents under the influence of imagination. We are told in the Romantic Legend of Śākya Buddha as well as in the Lalitavistara the interesting story of the Lord Buddha, in his youth stealing into a garden with fifty associates only to be shocked at the hardships of the agriculturists and the beasts of burden there. In this his mental agony for the sufferers, imagination must have accentuated in him the feeling of sympathy.³

¹ Śāntarakṣita, *op. cit.*, Vol. I, com. to sūtra 735, p. 412.

² Bhavabhūti, *Mālātī Mādhava*, tr. by H. H. Wilson, prelude, p. 3.

³ The Romantic Legend of Śākya Buddha, p. 74; Lalitavistara, p. 194.

It is an interesting phenomenon recorded in many classical works that in some cases the lovers of both the sexes soothed their sufferings by actually drawing the pictures of the beloved from memory. Here imagination is very much in evidence. We see in Kālidāsa's Śakuntalā how Duṣyanta used the portrait of Śakuntalā, painted by Caturikā from her imagination, to heal the agony of his heart due to the pangs of separation.¹ The same poet also tells us in his Kumārasambhavam, how Gaurī, the daughter of mount Himālaya drew the portrait of Lord Śiva out of her imagination to satisfy her emotion of love, secretly by repeated looks at the portrait.² Śrī Harṣa in his Ratnāvalī tells us how Sāgarikā drew the portrait of Vatsa, the king of Kauśāmbi out of her image in the banana grove to quench her thirst of love for him.³ Thus the creations of the productive imaginations are harnessed in the service of the concrete realities of life. Sanskrit literature abounds with innumerable illustrations bearing on our topic. The following quotation from Bhavabhūti's Uttara-Rāmacaritam illustrates the influence of imagination upon the mind of a lover, long separated from his beloved wife.

¹ Kālidāsa, Śakuntalā, tr. by Sir William Jones, Act VI, pp. 106, 108-09.

² Kālidāsa, Kumārasambhavam, tr. by Ralph T. H. Griffith, Canto V, p. 66.

³ Śrī Harṣa, Ratnāvalī, tr. by H. H. Wilson, Act II, p. 17.

The paragraph here refers to Rāmacandra, the hero of the drama in question : "Remains stock-still [in meditation], with pathos. Alas, alas indeed !"

After a long, long meditation, when one creates [in fancy] and puts before him the image of his love, it is by no means the case that such [an image], although [the actual object be] far off, does not fill one with reassurance ; but with the dissolution of that [product of] imagination, the whole world becomes [once more] a void wilderness, and thereafter, as if upon a heap of blazing husks, the heart seems to be broiling.¹ In romance the image, derived from the sense of sight as well as from the senses of sound, touch, and smell, plays a significant role. Thus the imagination of sweet voice, song, pleasant touch, and sweet smell from the flower in the locks of hair of the beloved—all conspire to stimulate ardent love in a lover. It is through imagination that the adolescents of both the sexes try to solve the vital problem of their period of life—the problem of selecting the life's companion. This vitally important fact may be corroborated by many instances in sanskrit literature. Life, after all, was, what it still now is.

Imagination arising from the senses of sight, touch, sound, smell, and taste played a significant role in the vocational and educational guidance of

¹ Bhavabhūti, Uttara-Rāmacaritam, or Rāma's Later History, tr. by Shripad Krishna Belvalkar, Act VI, Para. 38, p. 92.

the adolescents in ancient and in modern times. We may illustrate our point from the cases of Jivaka and Upāli. Jivaka was the illegitimate son of Abhaya, son of Bimbisāra, Lord of Magadha. Once while the boy was playing with other princes in the palace, they taunted him with having no mother. Being thus insulted he went to Abhaya to enquire who was his mother. On being told by Abhaya that he had no mother, he realised the gravity of the situation, and made up his mind to select a proper vocation for himself, so that he might earn money and have relations. In this his careful vocational and educational selections, Jivaka was undoubtedly influenced by the imagination of evil consequences that were awaiting him unless he learnt some profession. As a prelude to the proper selection of right occupation, Jivaka made a careful survey of the whole range of Hindu curricula, inclusive of eighteen sciences and sixty-four arts with their advantages, disadvantages, and future prospects. In this vocational and educational selections, he was undoubtedly guided by imagination arising from the six senses. Some details connected with this particular are given in the following authoritative words: "Then Jivaka reflected, when he heard this circumstance related, that he would receive no inheritance from his relationship; so he resolved that he would learn some science, and then by his attainments he might be able to acquire both relatives and wealth.

Again he considered the character of the eighteen sciences and the sixty-four arts, and determined that he should study the art of medicine, that he might be called doctor, and be respected, and attain to eminence.¹ In the case of Upāli his parents decided the career for him. In their careful consideration of diverse vocations, such as writing, counting, money-changing, and monastic life, his parents were under the spell of imagination, especially the one arising from the senses of touch, sight and taste. Thus in their rejection of writing and counting professions for Upāli, their son, they were influenced by the imagination of pain and pleasure arising out of the sense of touch as from the sores in fingers and disease in the breast. In their rejection of the profession of money-changing the parents were under the spell of the imagination arising out of the optical sense. Finally, in their acceptance of the profession of monkhood for their son, they acted under the spell of pleasant imagination arising out of the senses of sight and taste.² Briefly speaking, the parents in vocational and educational guidance of their children acted under the influence of imaginations which helped them in making final selection of vocation for Upāli. This conclusively proves the influence of imagination

¹ Manual of Buddhism, tr. by Hardy Spence, p. 238 ; Vinaya Text, tr. by T. W. Rhys Davids and Hermann Oldenberg, Vol. II, Mahāvagga, para. 5, p. 174.

² *Ibid.*, Vol. I, pp. 201-02.

upon the parental duty of selecting a career for the son. The parents of Upāli exercised a good deal of creative imagination in the selection of a proper vocation for him. This is merely a typical example which was followed by hundreds of youths in ancient India. Visualisation or *bhāvika* is the practice of recalling the past and the future events in the mind as if they were both present before the eyes.¹ Here Upāli's parents had before their eyes the evil consequences of each vocation known to them in the past along with the thought that such evils may befall upon their son before they made final decision for him to join the Buddhist order where he will be quite comfortable spiritually, mentally, and economically in an ideal environment. The parents of Upāli were evidently shrewd and calculating persons who were past-masters in the art of selecting the proper type of education for their child.

Not only in educational and vocational programme but also in the method of teaching, the influence of imagination is immense. Fertile imagination stimulates interest in the pupils for study. Consequently ancient Indian educators resorted to story-telling to stimulate the imagination of young pupils as a means of effective teaching. The following extract from the *Brahmasūtra* supports our thesis: "The stories not serving the purpose of *pāriplavas* are intended to introduce the

¹ Mammaṣa, *Kāvyaprakāśa*, tr. by Ganganath Jha, p. 356,

vidyās. The story form is meant to catch the imagination of the student who will thereby be more attentive to the vidyā described."¹

In any systematic thought leading to definite construction we are guided by imagination. In designing an unseen object imagination plays a helpful part.² Through imagination also we build castles or palaces in the air.³ Briefly speaking, it is the basis of systematic thought, well constructed plan, and the making of design for a palace. Many other competent authorities may be cited in support of our contention. The following extract from Stcherbatsky may be quoted in our support: "But since our images are indirectly products of external points of reality, they are capable of directing the purposive actions of men towards these points of reality, and thus they are (indirectly right knowledge, since) they do not contradict the immediate human experience."⁴

Imagination is the most helpful factor in all artistic creations—in poetry, drama, and in painting. It plays a specially important part in dramas and in Epics.⁵ In addition to the creation of dramatic

¹ Brahmasūtra, tr. by Vireswarananda Swami, p. 423.

² T. H. Stcherbatsky, Buddhist Logic, Vol. II, p. 45.

³ Śāntarakṣita, Tattvasaṃgraha, tr. by Ganganath Jha, Vol. I, Chap. XIII, com. to sūtra 748-49, p. 419.

⁴ T. H. Stcherbatsky, Buddhist Logic, Vol. II, p. 412.

⁵ Śāntarakṣita, Tattvasaṃgraha, Chap. XIII, Com. to sūtras, 748-49, p. 419.

characters sights, and scenes, the topics of discussion are properly developed through the aid of imagination. The following text supports our point : "In the utsṛṣṭikāṅka one should develop a well-known subject by means of the imagination."¹

According to the Māṇḍukyopaniṣad imagination precedes all our well-planned actions, nay, even God himself was influenced by imagination in the creation of the universe.² All works such as the manufacture of pottery and the weaving of cloth, nay, even the creation of the world are the products of well-planned imagination.

In religious meditation and yogic practices imagination influences the votaries in the creation of the image of God in the mind for worship.³ Imagination is the basis of dreams; and according to Patañjali, we imagine beforehand what we see in dream; and this is the reason why we remember what happens in dreams.⁴ In other words imagination is the basis of memory. According to Madhusūdana imagination is not only the basis of dreams but also of perception preliminary to self-consciousness.⁵

¹ Dhanañjaya; Daśarupa, p. 104.

² Māṇḍukyopaniṣad, tr. by Nikhilananda Swami, V. 14, p. 116.

³ Garuḍa Purāṇam, ed. by Manmatha Nath Datta, p. 259.

⁴ Patañjali, The Yoga System, tr. by James Haughton Woods, p. 31.

⁵ Madhusūdana, Siddhānta Vindu, tr. by Prahlād Chandra Sekhara Divanji, p. 266.

This brief discussion on imagination, culled out from the pages of the writings of the ancient Hindus and the Buddhists, reveals the important truth that the ancient educators thoroughly realised the vital importance of this factor in vocational and educational guidance of youths, especially in connection with the elimination of wastage of human energy. In practical and manual education relating to things like pottery, planning of buildings, and palaces, imagination plays a significant part. In literary pieces of work such as dramas, novels, and poetries imagination exerts a salutary influence. What is really striking is that even in religious devotion, imagination plays a helpful part in creating images of the Gods and Goddesses to be worshiped. Like the modern psychologists the ancient Indians could foresee the utility of imagination—both theoretical and practical, in devising the technique of teaching through the stimulation of the imagination of scholars.

CHAPTER VI

MEMORY

It is proposed in the present chapter to discuss somewhat in detail the contributions of Indian thinkers to the phenomenon of memory in its pedagogical aspects—the contributions which creditably bear comparison with their modern analogues in the West. Memory, it may at once be asserted, was regarded by Indian phrenologists as a special faculty of the mind. This view of theirs may be designated as the obsolete faculty theory. According to Āryadeva it was regarded as an innate¹—an attribute of the soul. Memory is an asset in self-realisation.² It retains its full vigour all through the physical growth of the human being though it wanes in old age. The Buddhist authorities who hold similar views³ with some modifications may be regarded as typical exponents of this theory. They assert that the vigour of memory corresponds to the vigour of the body. When the body is strong, the memory is strong; and when the body declines,

¹ Āryadeva, *Śataśāstra*, tr. by Giuseppe Tucci, pp. 34, 36.

² *Ibid.*, *loc. cit.*

³ The Romantic Legend of Śākya Buddha, p. 109; The Life of the Buddha and The Early History of His Order, tr. by W. W. Rockhill, p. 163; Lalitavistara, p. 238.

the memory declines too. This is a type of parallelism. Memory is the final result of the four stages of *matijñāna*; it represents firstly, the *Ava-graha* stage when the external object by its contact with our sensory organ gives us a general knowledge of it. Secondly, in the *Iha* stage we desire to have detailed knowledge of an object by comparing its similarities and dissimilarities with our known object. Thirdly, in the *Avāya* stage we desire to corroborate the specific knowledge derived in the second state. Fourthly, the *Dhāraṇā* stage concerned with the permanent impression of an object following the ascertainment of its specific knowledge, assists our knowledge. Nemicandra defines memory as follows: "Memory, therefore, is the result of these four successive stages of *matijñāna*."¹

In brief, sensations, perceptions, and imagination pave the way for memory. Memory is sustained by and depends upon the four stages of development referred to above. Sensations deal with the present, memory with the past, there being no co-operation between them.² Memory is the basis of intelligence and from the impairment of the former results the loss of the latter.³ Memory has

¹ Nemicandra *Siddhānta Cakravorty*, *Dāvva Saṃgaha*, tr. by Sarat Chandra Ghoshal, pp. 14-15.

² *Buddhist Logic*, Vol. II, p. 279.

³ *Mārkaṇḍeya Purāṇa*, ed. by Manmatha Nath Datta, p. 15.

a physical basis. This is evident from its decline in old age. Moreover, it is not developed in the infant—it grows gradually with the growing child though its fuller growth is not universal among all children. Individuals differ in point of the memory: the *smṛtimān* or men with strong memory do not forget the things they once learn.¹ The same view is stressed again by Vidyāpati Ṭhākura when he tells us how a scholar with similar intelligence never forgets a thing after once he has learnt of it. Thus it is the characteristics of strong memory to retain the impression in the mind after hearing a thing only once. The point is illustrated by citing the case of Kokā, a monk of strong memory who remembered the recitations of a book read aloud to him by a scholar not from a long distance. A relevant text runs: ‘He who mastereth that which is said to him but once, and who forgetteth not that which he hath heard but once, whose mind keepeth in store what it hath received, is here called ‘Exact in memory.’

■
 ‘Not only did I hear thine epic with mine ears, but I have carried it in my memory, and if thou, Sir, dost not believe me, then, I pray thee, hearken.’ With that he straightway recited all the verses of the epic that he had heard during the

¹ Yājñavalkya Smṛti, tr. by J. R. Gharpure, pp. 571, 573.

preceding month.”¹ We also retain a thing in our mind in subconscious stage even though we may not remember it all the time. This forgetfulness may be due to diverse reasons given in the *Dhamma-Saṅgaṇī*, the first book of the *Abhidhammā-Piṭaka* in these words : “What is forgetfulness ? Unmindfulness, lapse of memory, non-recollection, non-remembrance, not bearing in mind, superficiality, oblivion.”² Thus some of the most important contributions of the modern psychology were anticipated by Indians. Finally, it is the peculiarity of memory to remember the first and the last portions of a lesson. To ensure this firmness of memory, and to avoid its relapse into oblivion it is strictly enjoined upon a pupil in the *Aitareya Brāhmaṇa* to study thrice the first and the last portion of a lesson.³ We learn from Buddhist sources that a succession of events rouses memory from its slumber.⁴ The *Bhāṣya* of Gotama’s *Nyāya Sūtra* prescribes four ways of developing our memory. First, we must focus our mind on the things to be remembered and recall to our mind its peculiarities. Secondly, recollection is facilitated in our mind

¹ *Vidyāpati Tāhura*, *The Test of a Man being the Puruṣa Parikṣā*, tr. by Sir George A. Grierson. pp. 45-46.

² *Dhamma-Saṅgaṇī*, tr. by T. W. Rhys Davids, pp. 353-54.

³ *Aitareya Brāhmaṇa*, tr. by Ramendra Sundar Trivedi, p. 103.

⁴ Henry Clarke Warren, *Buddhism in Translations*, p. 316.

by associating a series of things in an arranging order resulting in recognition. Thirdly, the thing to be remembered is associated with some known facts or events. Fourthly, the retentiveness of the mind is enhanced by recollection. In brief, attention, recollection, recognition, association, and repetition are the five laws of memory.¹ Gotama mentions almost identical causes for stimulating memory in a passage which runs as follows: "Memory is awakened by such causes as attention, context, exercise, signs, marks, likeness, possession, relation of refuse and refugee."² Caraka, the famous Indian Physician of the first century A.D. lays down eight conditions³ for the improvement of memory some of which are in substantial agreement with Gotama.

Memory is important in the mental life of an individual; and it is a source of knowledge.⁴ In the laws of learning memory is important. Not only in education but also in our social and domestic life the possession of memory is of great importance. The social intelligence is dependent upon

¹ The Nyāya Sūtra of Gotama, tr. by Ganganath Jhā, p. 377.

² *Ibid.*, tr. by MM. Satish Chandra Vidyabhushana, p. 96, Para. 119.

³ Caraka Samhitā, tr. by Avinash Chandra Kaviratna, Vol. I, p. 690.

⁴ Māṇḍūkyaopaniṣad, tr. by Nikhilananda Swami, pp. 121-22.

memory as is evident from the following extract :
“Therefore where many are assembled together, if they have no memory, they would hear no one, they would not perceive, they would not understand. Through memory we know our sons, through memory our cattle.”¹

From the above discussion it is clear that the phenomenon of memory which plays a vitally important part in the intellectual life of a man and which is full of tremendous import in the field of education received a thoroughly systematic and scientific treatment in the hands of the psychologists of ancient India who paid special attention to its methodical culture and systematic development. They realised all the more the importance of this valued faculty, at a time when the art of printing, with its facilities was non-existent.

¹ Chāndogyaopaniṣad, tr. by F. M. Muller, Part I, p. 119.

CHAPTER VII

INTELLIGENCE

Intelligence has been very accurately defined by Kauṭilya as the capacity for works.¹ Another authority Viṣṇuśarmā defines it as the power which gives us control over the world.² In a word, intelligence is the power for adaptation to the environment: it is also the capacity to reshape and remodel our environment for social progress. Memory is the basis of intelligence, any damage or loss of which results in the corresponding loss of intelligence. Our very existence in the world is dependent upon it. To emphasize the importance of this faculty is a sheer piece of truism. Practically speaking, it is the soul of civilization and all human progress and culture.

Intelligence is hereditary and is transmitted to the sons by the father. That intelligence is hereditary is mentioned in the Atharva-veda as follows: "Oh Indra, bring us ability (krātu), as a father to his sons;"³ This view is corroborated by successive writers at different times. The Brahmasūtra tells us that intelligence is the gift of God and it is fixed

¹ Kauṭilya's Arthaśāstra, p. 16.

² Pañcatantra, tr. by Arthur W. Ryder, p. 81.

³ Atharva-veda, tr. by W. D. Whitney, Vol. II, v. 67, p. 867.

at birth. The text runs : "so God is the general efficient cause in bringing the latent tendencies of each individual to fruition."¹ The sharpness of intelligence is inborn and hereditary.² The following quotation supports our contention: "One clear eye is a man's inborn intelligence."³ Ceremonies were in vogue in ancient India for the growth and development of native abilities.⁴ Intelligence is not only hereditary but it is also developed through proper diet. The Agnipurāṇam prescribes vaca, agniśikhā, balā, sunthi, kṛṣṇā, nisāgāda, yaṣṭi, and saindhava as the proper diet to enhance intelligence :

" sayasṭi saindhavam bālāḥ prātarmedhākaram pibet
devadārumahāśigru phalatraya payomucām."⁵

Ancient Hindus took special interest to ensure intelligence in the infants and would perform appropriate ceremonies for the purpose as described in the Gṛhya-Sūtra in the following words : " In the same way the production of intelligence (is performed). He should give to eat (to the child) clarified butter.

¹ Brahmasūtra, tr. by Vireswarananda, p. 189.

² The Jātakamālā, tr. by J. S. Speyer, p. 2.

³ Vikrama's Adventure, tr. by Franklin Edgerton, p. 29.

⁴ The Gṛhya-Sūtra, tr. by Hermann Oldenberg, Part II, pp. 56, 212.

⁵ Agni Purāṇam, tr. by Panchanan Tarkaratna, v. 5, p. 569.

Now (follows) the medhāgaṇanā (or production of intelligence). With (an instrument of) gold over which he has laid a Darbha shoot tied (to that piece of gold) he gives to the child, which is held so that it faces the east, ghee to eat, with the formulas 'Bhūh !' I sacrifice the Rikas over thee !"¹

Intelligence is of diverse kinds, a phenomenon of which constant mention is made by different authors differently as follows : viśiṣṭavuddhi,² viśeṣāvṛtti,³ viśeṣaguṇah,⁴ śiṣṭavuddhi,⁵ iṣṭavuddhi,⁶ malinavuddhi,⁷ sthiravuddhi,⁸ viśadavuddhi,⁹ pratyutpannamati,¹⁰ pāpaviniveśitacetāḥ.¹¹ The Atharva-veda recognises different types of abilities, when it mentions of Indra, the Lord of the plough

¹ The Gṛhya-Sūtra, Part II, v. 20, p. 56, v. 9, pp. 212-13.

² Pañcānan Viśvanātha, Kārikāvali, Muktvāli, Dinakāri and Rāmarudrī, ed. by Ananta Sastri, pp. 64, 118.

³ *Ibid.*, p. 97. ⁴ *Ibid.*, p. 167.

⁵ Śrī Śaṅkara, Upadeśasahasrī, tr. by Akshya Kumara Sastri, p. 294.

⁶ Vātsāyaṇa, Kāmasāstra tr. by Mahesh Chandra Pal, p. 297.

⁷ *Ibid.*, p. 615.

⁸ Kṛṣṇayajurvediya Dhyānavindūpaniṣad, tr. by Mahesh Chandra Pal, p. 7; Māgha, Śiṣupālavadham, Canto II, v. 77, p. 88; The Nirukta, Naigamaṁ Kāṇḍam, ed. by H. M. Bhadkamkar, Vol. I, p. 467; The Rāmāyaṇa, Āraṇya Kāṇḍa, Canto 35, v. 3.

⁹ Rūpagoswāmī, Nājaka Candrikā, tr. by Rash Behari Sankhyatirtha, p. 40.

¹⁰ *Ibid.*, p. 112.

¹¹ *Ibid.*, p. 114.

as possessed of hundred abilities or powers.¹ Jaimini in his *Pūrvamīmāṃsā Sūtra* mentions of "the peculiar character of the intellect of certain persons;"²

Intelligence, a virile power, is dormant in infancy. It grows and develops gradually with years, reaching perfection in adolescence: "An illustration of this is seen in the case of virile power and others. They remain latent in an infant, though these powers exist in the soul yet they are not apparent, it is only in youth that they manifest themselves."³ The Buddhist source supports the above view of the *Vedānta Sūtra*. Intelligence though matures with the physical growth of a growing child, ⁴ its rate of growth is not uniform in all children. The *R̥gveda* tells us of the mental inequalities existing in different personalities in the following language: "Friends possessing eyes, possessing ears, were (yet) unequal in mental apprehension."⁵ In some its growth reaches highest perfection, in some its growth is at a minimum and

¹ *Atharva-veda*, tr. by W. D. Whitney, Vol. I, Book VI, Hymn XXX, v. 1, p. 302.

² Jaimini, *The Pūrvamīmāṃsā Sūtra*, tr. by Ganganath Jha, p. 248.

³ Bādarāyana, *The Vedānta Sūtra*, tr. by Rai Bahadur Srisa Chandra Vasu, p. 366.

⁴ Henry Clarke Warren, *Buddhism in Translations*, pp. 255-56.

⁵ *The R̥gveda Śamhitā*, tr. by H. H. Wilson, Vol. VI, *Aṣṭaka*, VIII—Adh. III, v. 7, p. 196.

in others it is retarded. This accounts for individual differences. The *Garuḍa Purāṇam* tells us of rare type of intelligence.¹ The same authority again refers to three distinct types of people, such as erudite, idiot, and of average intelligence.² Viṣṇuśarmā in his *pañcatantra* mentions of persons with eminent intelligence.³ The *Śābara Bhāṣya* mentions of persons with dull intelligence⁴ and Gotama in his *Nyāyasūtra*, of persons, possessed of three distinct levels of intelligence such as—laukika or ordinary abilities below the average, secondly, those, possessed of average intelligence, and thirdly, *parikṣaka* or those trained investigators, possessed of superior intelligence, quite competent to make independent investigations by means of arguments and proofs.⁵ The *Śābara Bhāṣya* emphatically asserts that men differ from one another in intelligence and are relatively dullard. A relevant text runs: "Further, in comparison with some one or the other, all persons may be of dull intelligence."⁶ Jaiminī also is of opinion that individuals differ from one another in their

¹ The *Garuḍa Purāṇam*, ed. by Manmatha Nath Datta, p. 255.

² *Ibid.*, p. 327.

³ Viṣṇuśarmā, *Pañcatantra*, tr. by A. W. Ryder, p. 225

⁴ The *Śābara Bhāṣya*, tr. by Ganganath Jha, Vol. III, Adh. X—Pāda. IV, Adhi. 27, com. to sūtra, 49, p. 1850.

⁵ Gotama, *Nyāyasūtra*. tr. by Ganganath Jha, p. 57.

⁶ *Śābara Bhāṣya*, Vol. III, Adh. X—Pāda. IV—Adhi. XXVII, commentary to sūtra, 49, p. 1850.

capacity or incapacity.¹ The Nirayāvaliyāo, the eleventh Jaina Canon mentions four talents such as intuitive or autpattikī, disciplined or 'vainayikī,' the talent acquired by practice or 'Karmajā' and the developed talent or the talent reaching perfection in the maturity of age called 'Pārināmikī.'²

Aśvaghoṣa classifies human beings into five distinct classes on the basis of their intelligence. Firstly, unusually gifted people, secondly, those of intellectual powers, competent to comprehend the many sided meanings of the sūtra. Thirdly, those of average intelligence, competent to grasp the meaning of the sūtra after repeated study of them. Fourthly, those of mediocre intelligence, capable of understanding the meanings of the sūtra with the aid of the commentaries. Fifthly, those of retarded intelligence study the doctrine in a concise form.³ Thus according to Aśvaghoṣa, people are classified into rare genius, superior intelligence, average intelligence, mediocre in intelligence, and of retarded intelligence; and they study the śāstra according to the natural bent of mind. The Buddhist educational authority here displays a marvellous acumen,

¹ Jaimini, The Pūrvamīmāṃsā Sūtra, tr. by Ganganath Jha, para, 2, p. 282.

² Nirayāvaliyāo, tr. by A. S. Gopani and V. J. Chokshi, pp. 16-17.

³ Aśvaghoṣa's Discourse On The Awakening of Faith in The Mahāyāna Literature, tr. by Teitaro Suzuki, p. 51.

and an anticipation of the practice of the modern educators in the advanced countries like the U.S.A. and England.

Our discussion reveals thus far that individuals differ from one another. The sex factor also plays an important rôle in individual differences. The Lord Buddha regards women to be inferior to men in wisdom.¹ The *Atthaśālinī* subscribes to the above views of the Lord in the following words : "Of the two, the masculine sex is superior, the feminine is inferior."² The subsequent writers hold different views as to the native abilities of the fair sex. According to Śūdraka, women by nature possess native abilities or intelligence. The text runs : "Nature herself gives women wit."³ Śrī Nārada in his *pañcarātram* claims the superiority of women to men in native ability, in shrewdness and in diet. The following quotation bears us out : "The food of women is twice that of men ; their intellect is four times ; their power of counselling is six times that of.....men."⁴ Rājasekhara, a ninth century scholar, dramatist and poet advocates the equality of women with men in intelligence and

¹ The Book of The Gradual Sayings, tr. by F. L. Woodward, Vol. III, p. 93.

² *Atthaśālinī*, tr. by Maung Tin, Vol. II, p. 421.

³ Śūdraka, *Little Clay Cart*, tr. by A. W. Ryder, Act IV, v. 19, p. 63.

⁴ Śrī Nārada, *Pañcarātram*, tr. by Vijñānanda Swami, p. 69.

native ability. According to him the apparent differences between the two sexes are due not so much to heredity or nature but to environment or nurture. The relevant passage supports our above view. "Puruṣavat yoṣito'pi kavibhaveyuh. saṃs-kāro hyātmani samavaiti, na straiṇaṃ pauraṃ vā vibhāgamepekṣate. śrūyante dṛśyante ca rājaputro mahāmātyaduhitaro gaṇikāḥ kautukibhāryyāśca śāstraprahitavuddhayaḥ kavayaśca."¹

Viṣṇuśarmā holds that women naturally excel men in the knowledge of some occult branches of learning specially known to Uśanā or to Vṛhaspati. Such knowledge is innate with women as it were. This proves clearly that they can make remarkable progress in these branches of studies. The following extract bears us out: "Uktañcā uśanā veda yacchāstraṃ yacca veda Vṛhaspatiḥ. svabhāvenaiva tacchāstraṃ strīvuddhau supraṭiṣṭhitam."² This is an accurate and a scientifically deep view. Over and above, individuals also differ in their ability to master some subjects. The Dharmasūtra distinctly refers to it. Different types of intelligence are required of an individual for success in different subjects. Thus according to the Dharmasūtra the courses of the Vedas, Dharmasūtra, Purāṇa,

¹ Rājasekhara, Kāvya-mīmāṃsā. ed. by C. D. Dalal, p. 53.

² Viṣṇuśarmā, Hitopadeśa, tr. by Lakshmi Narayan Nyayalankara, p. 100.

Agriculture and Vedāṅga are arranged in the order of learning difficulties or levels of intelligence, requiring lesser intelligence on the part of the scholars as they proceed to the study of each succeeding subject commencing from the Veda. This clearly proves that not all scholars make equal rate of progress in the study of all subjects. The following extract bears us out :

“Those, failing to understand the Vedas, study the Dharmaśāstras; those, failing to master the Dharmaśāstras, study the Purāṇas; those, failing to acquire proficiency in the Purāṇas, betake to Agriculture; and those, failing in it, became Bhāgavatas.”¹ Jaiminī in his Pūrvamīmāṃsā Śūtra also subscribes to the above view when he speaks of the ‘Peculiar’ character or the intellect of certain persons such as ‘logical subilty’.²

According to Viṣṇuśarmā superior intelligence is not fatigued or blunted by thorough scientific studies or researches.³ Māgha in his Śīsupālavadham supports this view when he tells us that intelligent people with their rightful and sober intelligence never feel mental fatigue even though they are always engaged in work. A relevant text runs :

¹ Dharmasūtra, ed. by Manmatha Nath Datta, Vol. I, p. 330.

² Jaiminī, The Pūrvamīmāṃsā Śūtra, tr. by Ganganath Jha, p. 248.

³ Pañcatantra, tr. by A. W. Ryder, p. 366.

“ sopadhānām dhiyaṁ dhīrāḥ stheyasiṁ khaṭvayanti
ye tatrāṇīsaṁ niṣaṇṇāste jānate jātu na śramam ”¹

The ancient Hindus knew full well that intelligence reaches its maximum efficiency under favourable climatic condition. This view is similar to the one held by the modern climatologist. Mammaṭa in his *Kāvyamīmāṃsā* inserts a quotation from Kālidāsa's *Raghuvamśa* wherein is stated that intelligence is very active in the latter part of the night. The following extract bears us out: ‘just as the intellect obtains enlightenment from the latter part of the night.’² Kauṭilya in his *Arthaśāstra* describes the chief qualities or characteristics of intellects as follows: “Inquiry, hearing, perception, retention in memory, reflection, deliberation, inference and steadfast adherence to the conclusions are the qualities of the intellect.”³ Thus according to Kauṭilya sensations, specially hearing, perceptions, sharp memory, thinking, discrimination of right from wrong, drawing inferences and sticking firmly to the conclusions are the sure grounds of intelligence. The Śabara Bhāṣya hints at the idea that intelligence along with memory may be improved.⁴

¹ Mīgha, *Śiśupālavadham*, ed. by Haridas Siddhanta-vagis, Canto II, v. 77, p. 88.

² Mam-naṣa, *Kāvyaprakāśa*, tr. by Ganganath Jha, p. 271 ; *Raghuvamśam*, Canto XVII, V. I.

³ Kauṭilya, *Arthaśāstra*, tr. by R. Shamaśāstrī, p. 319.

⁴ Śabara Bhāṣya, tr. by Ganganath Jha, Vol. II, Adh. VII, Pāda. I, Adhi. I. com. to sūtra 5, p. 1235.

The improvement of intelligence is possible only through proper association with known facts, if the intelligence is sharp. Retarded intelligence, however, cannot be improved.

The practice of testing intelligence was in vogue in ancient India. There again, is an instance of anticipation of modern practice. We have many authoritative texts in support of our view. Viṣṇuśarmā in his Pañcatantra mentions the practice of testing intelligence in the following words: "But it was necessary first to test your intelligence."¹ According to this authority intelligence is tested by conversation: 'He is not unintelligent. His speech proves it.'² Intelligence as well as inner feelings of a person can easily be ascertained by a wise man from physical features, jestures, walking posture, speech, change in the eye or in the facial expressions. The following extract bears us out:

" But men of wisdom can infer
Unuttered thought from feature's stir.
For wit rewards its worshipper.
And again :
From feature, jesture, gait,
From twitch, or word,
From change in eye or face
Is thought inferred."³

¹ Viṣṇuśarmā, Pañcatantra, tr. by A. W. Ryder, p. 226.

² *Ibid.*, p. 226.

³ *Ibid.*, p. 28 ; Lalitavistara, p. 151 ; Vikrama's Adventure, tr. by Franklin Edgerton, Part I, pp. 29-30.

The American psychologists of today lay great emphasis upon the change or jump of the eyes in discovering the intelligence of a pupil. In this respect Viṣṇuśarmā was far ahead of the modern psychologists in his advocacy of discovering native ability or intelligence by a study of the jumping of the eyes of a pupil. The Garuḍa Purāṇam also mentions the discovery of intelligence from a study of the countenance of a man.¹ Like the modern psychologists Kauṭilya knew that intelligence or capacity of a man is best determined from his ability in work. Briefly speaking, intelligence is discovered in a man through placement in work. 'For a man's ability is inferred from his capacity shown in work.'²

Moreover, puzzles, based on everyday experiences were resorted to by ancient Hindu scholars such as Kālidāsa, Vararuci, Bhavabhūti and others to discover the intelligence of a man : Udvaṭasāgara is full of such puzzles. The ancient Hindu savants realised the importance of intelligence in our mental life, and classified human being on the levels of intelligence. They devised technique, however inadequate it might be judged by the modern standard, which is, nevertheless, psychologically sound, and the educational programme of the educand was based on his levels of intelligence.

¹ The Garuḍa Purāṇam, ed. by Manmatha Nath Datta, p. 323.

² Kauṭilya, Arthasāstra, p. 16.

CHAPTER VIII

HEREDITY AND ENVIRONMENT

We propose to discuss in this chapter the influences of heredity and environment upon each other. An ideal environment facilitates the fullest development of the faculties of the mind ; a poor environment retards them. An ideal environment, however, cannot create intelligence : it cannot convert an idiot into a scholar.

The ancient Hindus knew that the mental and the physical traits are hereditary and as the best means of preserving these they recommended the selection of brides of superior intelligence, born in a family with rich hereditary stock.¹ The Romantic Legend of Śākya Buddha tells us of sixty qualities in a family in which Lord Buddha was to be born. Among the excellent traits are mentioned physical gracefulness, sociability and mental power. The text runs : “(10) The women of that family must be famed for their beauty. (11) The young men must be famous for their wisdom. (12) The disposition of the members of that family must be agreeable and amiable.....(16) Well gifted with

¹ The Ghyā-Sūtra, tr. by Hermann Oldenberg, Part I, pp. 164-65.

intellectual power.”¹ Over and above these physical and mental traits of the paternal family, the mother also must possess good moral virtues, physical and mental traits, and must come from a high family with respectable connections.² Viṣṇuśarmā in his Pañcatantra emphasises the hereditary nature of mental capacity and moral character. A son inherits these traits from the father. The relevant text runs: “Your evil conduct demonstrates an inherited lack of executive capacity. Surely your fathers before you were the same kind of person. For,

The character of sons
The father e’er reflects :
Who, from a screw-pine tree
An emblic fruit expects?’”³

It is patent that we inherit the traits of our mind from our parents. This supplements the influence of the environment on men. Briefly speaking, conduct is the product of heritage or nature, and speech or language is the product of nature or environment. A relevant passage runs: “Conduct shows the birth or parentage of a man; and his speech, his country.”⁴ A poor environment exerts

¹ The Romantic Legend of Śākya Buddha, tr. by Samuel Beal, p. 31.

² *Ibid* p. 32.

³ Viṣṇuśarmā, Pañcatantra,

tr. by A. W. Ryder, p. 182.

⁴ The Garuḍa Purāṇam, ed. by Manmatha Nath Datta, p. 353

a retarding influence even upon the genius.¹ The association of the base exerts a similar influence upon a man of great wit.² The Mahābhārata tells us of the retarding and the salutary influences of the poor and the good environment. Thus the association of the mean lowers the intelligence of a man, that of the average man develops the intelligence up to the average standard, and that of the best man develops intelligence to its fullest extent. That is, the intelligence of a man is either retarded, averaged or highly developed accordingly as the association is either base, average or best. The relevant verse runs :

“ buddhiśca hīyate puṁsāṁ nīcaiḥ saha
samāgamāt
 madhyamairmadhyatām yāti śreṣṭhatām yāti
cottamaiḥ.”³

Social intelligence remains undeveloped either in a poor environment or in isolation. This reaches appropriate stages of development only in an ideal society ; and isolation from human society arrests its development. Kalhana Miśra in his Rājatarāṅgiṇī bears us out this contention in the following words : “Lothana, on the other hand, whose intellect and sociability had remained undeveloped owing to his

¹ Vidyāpati Thākura, *The Test of a Man*, tr. by Sir George A. Grierson, v. 24, p. 28.

² *Ibid.*, v. I, p. 67.

³ Mahābhārata, ed. by Haridas Siddhantavagis, Vol. V, Vanaparva, Canto I, v. 30, p. 9.

isolation openly reviled the Dāmara who was fully occupied with his duties.”¹ Intelligence—general and social as well as the general nature of both the sexes undergo changes through contact with others. Thus women with constant companionship with their husbands remodel their nature after the pattern of their husbands.² Similarly different environment or associations exert various kinds of influences upon a man. Thus the emotion of love is developed in a man if he comes into closer contact with his beloved and again he becomes indifferent if he comes into closer contact with an indifferent man. Thus the passage runs: ‘as one single man supports a variety of characters, through the force of association,—being, through association with his beloved, a lover,—through association with one indifferent, indifferent,—and, through association with some other, something other.’³ According to the Garuḍa Purāṇam and the Suśruta Samhitā the character and conduct of a child, nay, even its liking for diet are influenced by those of its parents during gestation.⁴ Our discussion thus far reveals that the

¹ Kalhana Miśra, *Rājatarāṅginī*, tr. by R. S. Pandit, Eighth Tārāṅga, v. 2533, p. 511.

² Nārāyaṇa Bhaṭṭa, *Veṇiśamhāra*, tr. by K. N. Dravid, p. 15.

³ Kapila, *The Sāṅkhya Aphorisms*, tr. by J. R. Ballantyne, pp. 72-73; *The Sāṅkhya Philosophy*, tr. by Nanda Lal Sinha, p. 258.

⁴ *The Garuḍa Purāṇam*, ed. by Manmatha Nath Datta, p. 353; *The Suśruta Samhitā*, Vol. II, p. 132.

development of intelligence—general and social, and nature and character are all influenced by environment.

We noticed in the foregoing discussion that a favourable environment can develop these traits; it cannot create them. Similarly, environment or nurture cannot create intelligence. Vidyāpati Thākura was conscious of it and he tells us of an investigation into such a problem in ancient India, conducted by Candragupta, the Emperor. The phenomenon of the child under investigation was that of a dull-headed Brāhmaṇa, raised in the family of a Vaiśya and educated in that of a Kāyastha. The investigation conducted by Candragupta revealed that the Brahmin boy was begotten by a village Caṇḍāla in a Brahmin woman, the wife of a village beggar. Consequently he inherited poor intelligence and other vices of a low breed. Naturally a rich environment could not contribute to the improvement of his intelligence. Here is a fact of terrible significance—realistic as well as interesting. The following extract supports our contention: 'Born of beggared Brāhmaṇa folk, nurtured in a tradesman's home, taught his knowledge by a scribe, mean in wit will he surely be.'¹ And we quote again: 'He who is born of infamous lineage becometh an evil-minded sneak. In this

¹ Vidyāpati Thākura, *The Test of a Man*, tr. by Sir George A. Grierson, v. 2, p. 57.

world it be only one unlawfully begotten that dealeth ill to him that showeth kindness.'

The King replied, 'If his mother be alive, then this must be inquired into.' The merchant explained that she was alive, so the King, becoming curious, through an intermediary, persuaded the Brāhmaṇa mother of Mean-wit with gifts of money and other rewards and asked her concerning the matter. She, tempted in her heart by the money, confessed the whole truth. 'When my husband,' said she, 'who was a professional beggar, once went off looking for alms, then, one dark night, I was a young girl alone in the house, and was found by a Caṇḍāla of the village, and this Mean-wit is the offspring of the union.' Said the King, 'when a statement hath already been decided after due consideration, how can any contrary state of affairs be the truth? This fellow is certainly, as we expected, the son of a Caṇḍāla.'¹ Nor can an ideal environment alter the temperament of a man once it is fixed at birth.² Though an ideal environment or nurture cannot improve the intelligence of a man, born of mean origin, with poor hereditary stock, as is evident from the above case, it, nevertheless, favours the intellectual development of a child, born of enlightened family with rich hereditary stock. Thus the Śābara Bhāṣya tells us how a child, born

¹ Vidyāpati Ṭhākura, *The Test of a Man*, v. 16, p. 62.

² The *Suśruta Samhitā*, Vol. II, p. 156.

of an enlightened Brahmin family where the Veda was being constantly studied, became duly learned in the Veda and obtained merit and wealth.¹ It is needless to say that the Vedas are being constantly studied in a family with high native ability and not in a family with poor intelligence. Naturally the progeny in such an illustrious family will be gifted with superior intelligence.

Heredity and environment played a significant role in the selection of applicant for study, especially of philosophy which gives to a scholar high honour and position in society. The applicant used to be carefully selected on the basis of his native ability or intelligence and morality by a study of his physical traits such as eyes, brows, cheeks and retentivity. The family history of the student is also enquired into either by witness in case the parents are living and if deceased by consulting the family records, deposited in the State archives for three successive generations. It was a universally acknowledged custom in ancient India to record a family history at the time of the death of an important person. This psychological study, as to heredity and environment of a student concerning his native ability, disposition, morality, family purity and standard of living was conducted by learned Brāhmins, especially designed for the purpose wherein an applicant for the study of philosophy

¹ Śābara Bhāṣya, tr. by Gangānath Jha, Vol. I, Adh. I, Pāda II, Adhi. I, commentary to sūtra, 15, p. 63.

was sent by the teacher for such an enquiry into the nature and ability of the scholar. This was undoubtedly a highly judicious and scientific step. We learn of the prevalence of such practice in India from the "Indian Travels of Apollonius of Tyana," from his conversation with the King of Taxila. We quote below from the above document to substantiate our statement: 'Here, on the other hand, philosophy is a high honour, and before we allow any one to study it, we first send him to the home of the Brahmans, who inquire into his character and parentage. He must shew that his progenitors, for three generations, have been without stain or reproach, and that he himself is of pure morals and of a retentive intellect. The character of his progenitors, the king went on to say, 'if of living men, was ascertained from witnesses; and if of dead, was known from the public records. For when an Indian died, a legally appointed officer repaired to his house, and inquired into, and sat down in writing, his mode of life, and exactly, under the penalty of being declared incapable of holding any public office. As to the youth himself, they judged him worthy or otherwise from his eyes, eye-brows, and cheeks, which as in a mirror reflect the mind and disposition.'¹

Our study into the problem of heredity and environment reveals the fundamental truth that an

¹ The Indian Travels of Apollonius of Tyana, tr. by Osmond De Beauvoir Prieaulx, pp. 20-21.

ideal environment develops native ability and social intelligence of a man born of a rich hereditary stock. It cannot improve a delinquent with poor intelligence, born of retarded parents. Nay, it cannot even improve temperament and nature fixed at birth. This proves conclusively the limitation of the influence of environment. Poor environment or isolation on the other hand can, however, retard the development of native ability and social intelligence even though born of a family with superior intelligence. Heredity, then, counts for much in education. The ancient Indians knew thoroughly the inter-dependence of both the factors and took special care in the selection of candidates for higher education such as philosophy, after making a thorough investigation of native ability, emotion, character, family pedigree and purity after eliminating the undesirable ones. The study of delinquency was conducted in ancient India by an investigation into the problems of heredity and environment. In a word scholars with high heredity and rich social environment alone were selected for higher studies as both the factors of heredity and environment are essential to insure success here.

CHAPTER IX

PSYCHOLOGICAL BASIS OF HINDU EDUCATION

The theme of the present chapter is to discuss application of psychological principles to educational schemes in ancient India—a broad and a comprehensive theme. Let us begin with the first phase of it—a critical discussion of the educational programme of the growing child up to the dawn of puberty.

It has been pointed out in our first chapter how the ancient Hindus took care of the child in its embryonic stage. Immediately after birth, the new-born infant was handed over to the charge of a duly qualified nurse, especially trained for the purpose. This, however, did not happen all on a sudden: it was a thing of slow growth. Nursing does not figure as a profession during the Rigvedic period, when the mothers were the nurses of their own children.¹ In course of time, however, especially during the time of Buddha, nursing came to be recognized as a distinct profession. It was also during this period that the practice of rearing children became complex, demanding from the nurses the knowledge of a specialist. Then nursing was practically elevated to the status of a

¹ The *R̥gveda Samhitā*, tr. by H. H. Wilson. Vol. IV, p. 24.

science. Special qualifications were naturally demanded of the nurse, both personal and professional, such as efficiency in taking care of children, and maturity of years. A relevant Buddhist text quoted below gives us a clear idea of nursing entertained in that age: 'All ye are too young, Mahāprajāpati alone is fit for this charge, and so they all agreed to elect Mahāprajāpati for the purpose. Then Suddhodana committed the child to her charge, and allotted to her thirty-two waiting women—eight to nurse the child, eight to wash him, eight to feed him, eight to amuse him.'¹ This marks a distinct advance in the path of scientific progress of nursery from non-existence on a very obscure existence into a full-fledged development as a regular science. The special duties of these thirty-two nurses are laid down in the following passage: "The young prince was thereafter entrusted to the care of Mahāprajāpati Gautami, and 32 nurses were appointed to him,—who nursed him in their lap, who fed him with their breast, who played with him, and who wiped off the impurities from his body. Thus cherished, he grew up."² Thus a full and concrete use was made of the developed science of nursing in bringing up the royal infant, who

¹ The Romantic Legend of Śākya Buddha. tr. by Samuel Beal, pp. 63-64.

² Bu-Ston (Chos-hbyung), History of Buddhism, tr. by Dr. E. Obermiller, Part II, p. 13.

was afterwards to lead the suffering humanity from the darkness of sin into the full light of bliss. In plain English, the nurse, in the ideal, is to be thoroughly fit for the noble profession she means to adopt, by reason of qualifications due to birth, education, physical, mental, and moral excellencies. The Jaina canons—Antagaḍa-Dasāo and Aṇuttarovavāiya-Dasāo require the nurse to be “skilful and accomplished, well trained.”¹ From the extract cited below, we may have a pretty clear idea of these requisite qualifications. Suśruta prescribes the following qualifications for a nurse: “For the healthy growth of the child a wet-nurse should be selected from among the matrons of its own caste (Varṇa), and possessed of the following necessary qualifications. She should be of middle stature, neither too old nor too young (middle aged), of sound health, of good character.....

She should be of respectable parentage and consequently possessed of many good qualities.”² In a word, the nurse should come of a very respectable family, and she should possess the hereditary traits mentioned above. Over and above, the nurse should enjoy sound health and should be free from disease or mental fatigue. The following extract lends further support to our

¹ The Antagaḍa-Dasāo and Aṇuttarovavāiya-Dasāo, tr. by L. D. Barnett, p. 29.

² Suśruta Samhita, tr. by Kunjalal Bhishagaratna, Vol. II, pp. 225-26.

contention: "A child should not be allowed to take the breast of a hungry, aggrieved, fatigued, too thin, too corpulent, fevered, or a pregnant woman, nor of one in whom the assimilated food is followed by an acid reaction, or of one who is fond of incongenial and unhealthy dietary, or whose fundamental principles are vitiated."¹ This is indicative of the thoroughly comprehensive foresight and insight on the part of the authorities who undertook the task of giving instruction in the vitally important art of child-education or child-training. For the supply of profuse milk for the new-born baby the nurse should take nourishing diet consisting of the following items: "For the purpose of establishing a flow in her breast, her equanimity should be first restored, and diets consisting of śāli-rice, barley, wheat, shashtika, meat-soup, wine (surā), souviraka, sesamum-paste, garlic, fish, kaśeruka, Sringātaka, lotus-stalk, Vidāri-kanda, Madhuka-flower, śatāvari, Nalikā, Alāvu, and kāla-Sāka, etc., should be prescribed."² This goes very deep into the matter—a consideration of the welfare of the child leading to a consideration of the health of its foster-mother or the nurse.

CLASSIFICATION OF CHILDHOOD

Bhāvamīśra, on the authority of Suśruta, classifies childhood into three distinct periods, on

¹ Suśruta Samhitā, Vol. II, pp. 227-28. ² Ibid., p. 227.

the basis of diet, as follows : those dependent upon milk ; those dependent upon milk and rice, and those dependent upon rice alone.¹ According to Suśruta, for the first three days, and the whole of the fourth day, the new-born infant, during the dull-stage, should live on clarified butter and honey, saturated with the powder of the Ananta roots. On the second and third days, it should be given to take clarified butter mixed with the Lakṣmaṇa roots. On the fourth day, the infant should be given honey saturated with clarified butter in the morning and in the noon. The infant should be fed on the mother's milk from the evening of the fourth day on, and before giving it milk the mother should press out a quantity of milk from her breast and the same process should be repeated before giving the infant mother's milk. The relevant text runs : "Hence the baby should be fed thrice daily (morning, noon and evening) on a handful (child's own hand) of clarified butter and honey mixed with (a Rati weight of) pulverized Ananta roots sanctified with Mantras on the first day ; and on the second and third days the child should be fed on clarified butter prepared with the Lakshana (root). On the following (fourth) day the child should be fed on its handful of honey and clarified butter only twice (i.e., in the morning and at noon). (From

¹ Bhāvamīśra, *Bhāvaprakāśa*, tr. by Debendra Nath Sen and Upendra Nath Sen, *Pūrva khaṇḍa*, Canto. I, *Vāla-prakaraṇa*, v. 41, p. 30.

the evening of fourth day) the mother should first squeeze off a quantity of her milk and then give the child her breast. (This rule should be observed at the time of tending the child every day.)"¹

The Agnipurāṇam prescribes the following diet for boys for the development of their speech, wealth of beauty, longevity, and intelligence. According to this authority the menu for the breakfast of the boy includes vaca, agniśikhā, balā, śuṇṭhī, kṛṣṇā, nisāgada, yaṣṭi, śaṅkhapuṣpī. The relevant extract from this authoritative work runs as follows :

“ bālaiḥ sevyā vacā sājyā sadugdhā vā'tha tailayuk
yaṣṭikām śaṅkhapuṣpīm vā bālaḥ kṣīrānvitām pibet.
vāgrūpasampadyuktāyurmedhā śrīrvardhate śiśoḥ
vacā hyagniśikhāvāsāśuṇṭhīkṛṣṇānisāgadam.
sayaṣṭisaindhavaṁ bālaḥ prātarmedhākaraṁ pibet
devadārusahāśīgruphalatrayapayomucām.”²

These provisions are indicative both of wisdom and insight. The classification of childhood and the special rules relating to the diet referred to above are indicative of the profound attention paid by the scientists of India in those days of remote antiquity. Lord Buddha himself knew full well the retarding influence of malnutrition on the physical growth of the human being. He particularly noticed the universally prevalent

¹ The Sūśruta Saṁhitā, Vol. II, pp. 221-22.

² Agnipurāṇam, tr. by Panchanan Tarkaratna, adh. 283. vs. 3-5, p. 569.

deformity among the unfortunate poor, eking out their pittance from the mean vocations.¹ Āśvaghoṣa, the famous Buddhist scholar of the first century A.D. prescribed moderate diet for the upkeep of health, for, in his opinion, deficiency in diet exerts a damaging influence on the physical and the mental growths of the child.² The Jaina Sūtra³ and the Kathāsaritsāgarah⁴ also hold a similar view.

Cloth plays a very important part in the development of civilisation. Man has been humorously but rightly described as a clothed animal. Naturally we find, clothing, to be an object of delicate and scrupulous care in ancient India. There the little infants especially of the aristocratic class or royal family were adequately dressed. One authority runs: "When the prince was properly dressed, he innocently and with a smiling face and sweet accent thus addressed his aunt."⁵

Suśruta recommends a clean and purified chamber for the infants and the rubbing or ointment of their body as well.⁶ Mention is also

¹ The Book of the Gradual Sayings, tr. by E. M. Hare, Vol. III, p. 274.

² Āśvaghoṣa, the Saundarananda, Or Nanda The Fair, tr. by E. H. Johnston, Canto XIV, vs. 4 and 6, p. 77.

³ The Jainasūtra, tr. by Hermann Jacobi, part. I, p. 66.

⁴ Kathāsaritsāgarah, Āditastaraṅgaḥ, 14, Taraṅgaḥ, 6, vs. 39-40, also tr. by C. H. Tawney, vol. I, p. 96.

⁵ Lalitavistara, p. 174.

⁶ The Suśruta Saṁhitā, Vol. III, p. 144.

made in the R̥gveda of rubbing the limbs of the infants to ensure healthy growth and physical vigour. "They foster the tender infant, (Agni), with worship, as people rub (the limbs of a child to promote his) existence."¹ Sleep in the day time for all seasons of the year is essential for the physical growth of the growing child, as is evident from the recommendations in the Śyainika Śāstram.² In addition to profuse sleep in the day time sun-bath in the early morning in the open air is essential for a child's health and physical growth. We have clear evidence of it in Lalitavistara, wherein is mentioned the constant practice of carrying the infant son of King Śuddhodana, the future Buddha to the Vimalavyūha garden in the lap of the great matron Gautamī for a bath in the early rays of the rising sun.³ Thus we see in this connection that the ancient Indians were thoroughly cognisant of the salutary effect of the exposure to the rays of the rising sun. The practice of exposing infants as well as pregnant ladies⁴ to the morning sun was prevalent, the obvious motive being to ensure the health—both

¹ The R̥gveda Samhitā, tr. by H. H. Wilson, Vol. III, p. 308.

² Rudradeva, Śyainika Śāstram, tr. by MM. Haraprasad Sastri, para 29, p. 7.

³ Lalitavistara, pp. 178-79.

⁴ Dhammapada Commentary, tr. by Eugene Watson Burlingame, Part, I, p. 249.

of the infants that were and the infants that were to be.

Juvenile punishment received scientific and elaborately careful attention with the child psychologists and educationists in ancient India. Both Suśruta and Bhāvamīśra warn the parents and the guardians of the children not to handle them roughly, not to scold them too severely, and not to rouse them from sleep. All these elaborate rules are intended to ensure the welfare of the children. They hold that to make the child cheerful, it should be fondled and be given coloured toys and other apparatus of play for its amusement. This being done, the child becomes physically, emotionally, and mentally healthy and sound.¹ This all round care for the welfare of the child should be, as happily it was, the paramount concern of the true child-educator. Caraka, a famous physician of the first century A.D. also recommends coloured toys and playthings for infants and little children to amuse themselves through games during the pre-school period. This provision for games resembles astonishingly the modern practices in the kindergarten schools. Caraka prescribed toys of diverse colours, light and sound producing, capable of stimulating sense-activities of the little children, especially the senses of sight, sound, and touch : the coloured

¹ Suśruta Saṁhitā, Vol. II, p. 231 ; Bhāvamīśra, Bhāvaprakāśa, vs. 35, 37, pp. 30, 520.

toys stimulate the senses of sight, the sound-producing toys the auditory sense and the pointed toys the sense of touch. Thus the process of education had a sound scientific background in psychology. The extract quoted below supports our contention : "The child should also be given such toys as are well-coloured, productive of sound, delightful, light, not having pointed ends, incapable of being swallowed, not destructive of life, and incapable of exciting fear."¹

During the pre-school period, the young infants and the little children of both the sexes used to spend their time in sense and motor activities especially under the direction of the trained nurses. This holds good only in the case of children of the aristocratic classes. Specialisation among nurses was much in vogue in ancient India, specially since the time of the Buddha. We already noticed how thirty-two nurses under Mahāprajāpati Gautamī were appointed to take care of the young Buddha, each with a specialised duty to perform. Constant mention is made of specialised nurses being appointed to take charge of young infants. Mention is also made of such practice in Hindu, Buddhist and Jaina literatures. Thus the play-nurses stimulate the sense and the motor activities of the infants with appropriate play-things, the wet-nurses look to the hygienic and the

¹ Caraka Saṁhitā, Vol. I, p. 868.

physical purity of the infant; the tiring-nurses constantly follow the little children in their running about in all directions. The nurses not only look after the physical well-being of the children but also try to amuse them through music and games. We also learn from the Jaina source, how Goyāma (Gotama) of Bāravai (Dvārakā) was taken care of by innumerable nurses, schooled in foreign languages, clothed in foreign costumes. The little prince was constantly caressed, hugged and kissed by the nurses and he was passed from hands to hands and thus he grew in the midst of pleasure.¹ Kings, alone, could afford to indulge in luxuries like these in the matter of educating their children.

As already noticed in our first chapter, speech develops in the child in its experimental and erect stages when informal education commences under the fostering care of the nurse or upamātā. We learn of this practice from Kālidāsa's *Raghuvamśa* where it is mentioned how young Raghu learned to speak in a half uttered voice rudiments of language. Over and above, the young infant learnt from the nurse national manners and etiquette which gave immense pleasure to the king. We also learn from Kālidāsa's *Kumārasambhavam* how the infant Kārttikeya in his child-like play learnt to count by trial and error method, by counting the teeth of

¹ The *Antagaḍa-Dasāo* and *Aṇuttarovavāiṇya-Dasāo*, tr. by L. D. Barnett, pp. 28-29.

the snake, coiled round the neck of the Lord Śiva. These illustrations are of great pedagogical significance—both instructive, illustrative, and interesting, all the more so, as they are taken from some of the great masterpieces of literature. Instruction of children through playful activities is recommended by the Garuḍa Purāṇam.¹ The obvious implication is that the outward expressions of the spontaneous instincts of the mind is a highly useful educative agency. This view of the Garuḍa Purāṇam agrees with those of Suśruta, Bhāvamīśra and Kālidāsa. It is evident that the educators of ancient India took into account the problem of providing an ideal programme for the education of the children before they were fit to go to school.

In the Vedic as well as in the post-Vedic periods, education began at home with parents as teachers. This was literally the case with the Vedic parents. R̥ṣabha, the first among the Jaina tirthaṅkaras acted as the first tutor of his children. The Dhammapada commentary refers to a royal tutor, appointed for the education of the princes.² It is quite likely that these immature children received formal instruction in the family in three r's viz., reading, writing, and arithmetic. We learn from the Rāmāyaṇa that young Rāmacandra,

¹ The Garuḍa Purāṇam, ed. by Manmatha Nath Datta, p. 323.

² Dhammapada Commentary, tr. by Eugene Watson Burlingame, Part. II, p. 31.

at the age of five (from conception) was sent to the house of his preceptor where he received his first instructions in the alphabets. It is further stated that he received his instruction in the science of grammar, the *kāvya*, the *smṛti* and the sixty-four arts.¹ After finishing his education in the liberal arts, he received his training in physical sciences and in military arts. It is clear from the verse of the *Rāmāyaṇa*, composed by *Kṛttivāsa*, that *Rāma-candra*, after the completion of his fifth year began his education with three *r's*, gradually receiving instruction from his tutor, *Vaśiṣṭha*, as he was advancing in years.² This proves conclusively that education was adjusted to the gradual growth, mental and physical, of the young educand. After the completion of his education at the dawn of puberty, when he was in full vigour of his adolescence he received his physical and military training in the gymnasium. We learn from the Romantic Legend of the *Śākya Buddha*, that Lord Buddha remained unschooled up to his eighth year, when his father after a careful deliberation with his ministers appointed *Viśvāmitra*³ and *Khāntadeva*⁴ to teach the

¹ *Vālmiki*, The *Rāmāyaṇa*, ed. by Panchanan Tarkaratna, *Ayodhyā Kāṇḍa*, Canto I, vs. 20, 34, p. 136.

² *Kṛttivāsa*, The *Rāmāyaṇa*, ed. by Dr. Dinesh Chandra Sen, p. 70.

³ *Lalitavistara*, Chapter 10, pp. 181-82; The Romantic Legend of *Śākya Buddha*, tr. by Samuel Beal, p. 67.

⁴ *Ibid.*, pp. 70-71.

young Buddha the three r's, liberal arts, fine arts, and the physical and military sciences. Here is a type of education radically different from that which was imparted to Rāmacandra in a previous age.

The academic and the military training of Lord Buddha in his boyhood went on simultaneously under the careful guidance of Viśvāmitra and Khāntadeva. This practice is much more laudable than the one pursued by Vasiṣṭha in the education of Rāmacandra who received his mental and physical training at different periods of life. The ideal curriculum comprising the academic, the fine arts, the physical and the military training designed for the young Buddha, offered ample scope for the proper balance between the mental and the physical growth—a practice which is astonishingly modern, and psychologically sound. The Jaina source also supports the custom of sending young scholars to writing or art schools after the completion of eighth year : prince Meghā (Mehā),¹ son of Bimbisāra, and prince Goyāma (Gotama)² of Bāravai (Dvārakā) were all sent to art schools, respectively at Rājagṛha and Bāravai after the eighth year.

The education of the growing child—formal or informal, whether imparted in the family or in the

¹ The *Ardha Māgadhi Reader*, ed. by Banarasi Das Jain, p. 101.

² The *Antagaḍa-Dasāo* and *Aṇuttarovavāiya-Dasāo*, tr. by L. D. Barnett, p. 30.

vedic or in the art school was based on the physical, the emotional and the mental growths of the growing educand. The curriculum was psychologically sound, carefully planned out to fit it well into the growing child. In truth, 'child-life' was the standard of education. Let us now turn our attention to the discussion of the educational programme of the growing educand in his adolescent and post-adolescent periods.

A typical programme of studies in the Brahmanic or Vedic School includes the three Vedas, the eighteen sciences, and the arts as is evident from the Jātakas regarding the programme of studies in the famous university of Taxila.¹ The curriculum in the Brahmanic School was not, however, universally the same all over India. The curricula varied from place to place to fit them into the growing needs of the locality. At a much later date, especially during the period of Jaina ascendancy the Brahmanic education was thoroughly assimilated into the Jaina system; and the educational programme of the Jainas also was varied at different places to meet the local conditions. The ideal curriculum in a Jaina monastery at Mōḍerapura in Guzerat, provided for the education of prince Āma, son of Yaśovarman, king of Kanauj and for Bappabhatti. This ideal curriculum was carefully prepared by Siddhasena Sūri. It included seventy-

¹ Jātika Stories, tr. by Robert Chalmers, Vol. I, pp. 126, 203.

two arts, comprising three r's, physical and military education, fine arts, sciences, vernacular languages, religious literatures, modern dialects, and pseudo sciences, etc.¹ The whole of this excellent scheme was meant for the growing child from the age of eight up to the full vigour of his youth in the adolescence. Similar curriculum with slight modifications to meet the local needs was provided for the educands of similar age in the metropolis of India, especially in Rājagṛha, Campaka, Vaiśālī, Vinita (modern Oudh), and Bāravai (Dvārakā).² The scheme of studies in the Jaina monastery was thorough, perfect and sound—psychologically, sociologically, and geographically. With this brief introductory remark about the curriculum in ancient and early mediaeval India let us now turn to an elaborate discussion of the manner in which the educators of ancient India carefully maintained a balance between their encyclopaedic curriculum of studies and the physical, mental, and spiritual fitness of the recipients of education. The close relation between the education and the educatee is a vitally important factor, the gravity of which is neglected by the moderns and was realised by the ancients as a rule.

¹ Rājasekhara Sūri, *Prabandhakoṣa*, ed. by Jina Vijaya Muni, Vol. I, p. 28 ; *Prabhācandra Sūri, Prabhāvakacarita*, ed. by Jina Vijaya Muni, Part I, p. 82.

² D. C. Das Gupta, *Jaina System of Education*, pp. 169-74.

We learn from the Rgveda how in ancient India it was the prevalent custom to rub the body of the new born infant in order to invigorate it.¹ This practice gives us some idea of the care taken for the physical welfare of the new born infant even in that early age. Suśruta recommends physical exercise as the surest means for the preservation of health. According to him, it makes the body of a man symmetrical, hardy in all limbs, active, energetic, light, and glossy. It improves the digestive power, and it makes the body susceptible to fatigue. Rightly enough this authority prescribed physical exercise as beneficial to health. According to him, physical exercise should be practised all the year round, as a rule; but specially in the winter and in the spring. He holds that it should also be scientifically regulated, so as to avoid the damaging effect of over-exercise.²

MILITARY EDUCATION

Military training was regarded as a serious part of education in ancient India. Scientific military training was much in vogue during the epic age; and it was the special preserve of Rāmacandra, Yudhiṣṭhira and their brothers. Specialisation in military science was then very popular and warriors and rulers received all-round training in it; with special stress on some particular branch of studies

¹ The Rgveda, tr. by H. H. Wilson, Vol. III, v. 14, p. 308.

² The Suśruta Saṁhitā, Vol. II, pp. 485-86.

according to the natural bent of mind. Lord Buddha himself in his boyhood received a military training along with five hundred Śākya princes in the Kān-Ku garden under the careful guidance of Khāntadeva, a renowned specialist in the military science.¹ We learn from Hemacandra's *Triṣaṣṭīśālākā-puruṣacaritra* how young prince, Sagara of the royal household of Vinita (modern Oudh) made a marvellous demonstrations of his feats in military exercises before Ajitasvāmī, out of a strong desire to learn military science from his teacher. It is also mentioned in this connection by Hemacandra that prince Sagara and his teacher, Ajitasvāmī pursued their occupation according to their natural bents of mind.² This proves conclusively that scholars in military science must not only be physically sound but also temperamentally and aesthetically fit for the profession. Briefly speaking, military profession was thrown open to scholars, possessed of physical and mental fitness. We learn from the *Mahābhārata* that even princesses received their military education from experts. The following extract supports the view of Viṣma on the above point :

“cakāra yatnaṁ drupadaḥ sutāyāḥ sarvakarmaṣu
tato lekhyādiṣu tathā śilpeṣu ca parantapaḥ.”³

¹ The Romantic Legend of Śākya Buddha, tr. by Samuel Beal, p. 71.

² Hemacandra, *Triṣaṣṭīśālākā-puruṣacaritra*, Vol. II, p. 71.

³ The *Mahābhārata*, ed. by Haridas Siddhantavagis, Udyogaparvan, Canto 179, v. I, p. 1533.

During the Jaina period Indian women also received training in military sciences in the art school as they pursued the same curriculum prescribed for the males.¹ It may be mentioned here that the śilpa curriculum includes physical and military sciences along with other courses of studies. The age under review must have been very much advanced in point of education, when some provision was made even for the initiation of the fair sex into the mysteries of it. Evidently the training of military science was both popular and thorough. Its adoption by female students marks a novel feature, anticipating a modern practice in some of the ultra-modern countries of the West. The whole scheme aimed at the physical development of the students, over and above supplying the state with its potential defenders.

Hunting was regarded a branch of military science. We learn from the Śyainika Śāstram that hunting excites the same emotions as are excited by dramatic performances on the stage.² The author of the book, Rājā Rudradeva of Kumāyon does not tell us of the emotions excited by dramatists on the stage. We learn, however, from the Kāvya Prakāśa of Mammata that there are eight rasas in the dramatic poetry which are as follows : "The Erotic, the Comic, the Pathetic, the Furious, the Heroic, the

¹ D. C. Das Gupta, *Jaina System of Education*, p. 60.

² Rājā Rudradeva of Kumāyon, *Śyainika Śāstram*, para. 62, p. 33.

Terrific, the Abhorrent or Disgustful, and the Marvellous—thus are named the eight Rasas in a dramatic poetry.¹ The same author tells us that hunting excites the emotions of ferocity, wonder, fear, laughter, heroism, and sorrow in the heart of a young hunter.² Almost all the hunters of ancient and mediaeval India were skilled in archery, a branch of military science. Buddhist literature abounds in illustrations of systematic training in archery.³ Naturally, then, training in archery offered the young adolescents scope to satisfy the emotions, mentioned both in Kāvya prakāśa and in Śyainika Śāstram. It is clear that the military training of the ancients in India was sound in conception, thorough in execution. It was as perfect as the circumstances of the time permitted.

FINE ARTS

The fine arts included painting, music, dramatic performances and dancing. All the fine arts were systematically cultivated in ancient India; and under royal and private patronage, they attained to a high degree of perfection. The fine arts consti-

¹ Mammaṭa, Kāvya prakāśa, v. 29, p. 34.

² Rājā Rudradeva of Kumāyon, Śyainika Śāstram, pp. 31-32.

³ The Vinaya Text, Kullavagga, tr. by T. W. Rhys Davids and Hermann Oldenberg, Part II, p. 349.

tute the most shining gem in the diadem of Indian culture. Painting was understood as a science and followed as an art enthusiastically and universally. Painting is possible either from a living object or from imagination. Bhāvika or visualisation is defined in the Kāvya prakāśa as the delineation of the past and the future events as if they were present before the eyes.¹ This is an exceedingly difficult thing requiring a good deal of effort and training. The drawing of portraits from visualisation stimulates imagination, memory or retention, and recognition. The following extract from Kālidāsa substantiates our statement : "or delineate a portrait of the lady Urvaśī and recreate your imagination by gazing on her picture."² Sanskrit literature, especially its dramas, and the Jaina literature abound in references where the heroes or the heroines drew the portraits of their beloved as well as of their lovers from visualisation. Thus King Duṣyanta was under the spell of his imagination while he was critically analysing the details in the portrait of Śakuntalā before his friend, Mādhavya.³ Pārvatī⁴

¹ Mammata, Kāvya prakāśa, tr. by Ganganath Jha, p. 356.

² Kālidāsa, Vikramorvaśī, tr. by H. H. Wilson, Act II, p. 25.

³ Kālidāsa, Śakuntalā, tr. by Sir William Jones, Act VI, pp. 106, 108-09.

⁴ Kālidāsa, Kumārasambhavam, tr. by Ralph, T. H. Griffith, p. 66.

and princess Sāgarikā¹ drew imaginary portraits of their lovers; Kusumāvalī² that of a female swan, and Śrīmatī³ drew one of her own good self. The Vinaya Text also tells us of the practice of drawing pictures from imagination.⁴ All these illustrate the current practices in ancient India of drawing pictures of the lovers and beloved from imagination to quench their appetite of love-stricken heart. Briefly speaking, painting stimulates our power of imagination and memory as well as the emotions of either the adolescent heart or the hearts of the love-stricken. Śrī Harṣa was conscious of this psychological truth when he puts the following remark into the lips of the hero of the Nāgānanda in a dialogue with the clown: 'Hero. (smiling) Friend! What wonder is there!' My beloved is ever present here being placed before me by my imagination. Gazing and gazing on her I paint her. What is there to wonder at?'⁵ In this extract the very expression 'gazing and gazing on her' suggests the element

¹ Śrī Harṣa, Ratnāvalī, tr. by H. H. Wilson, Act II, p. 17.

² Haribhadra Sūri, Samarāiccakahā, tr. by M. C. Modi, p. 80.

³ Hemacandra, Triṣaṣṭīśalākā-puruṣacaritra, Vol. I, pp. 60-61; Puṣpadanta, Mahāpurāṇa, ed. by Dr. P. L. Vaidya, Vol. I, Appendix, p. 646; D. C. Das Gupta, Jaina System of Education, p. 55.

⁴ Vinaya Text, part, III, p. 172.

⁵ Śrī Harṣa, Nāgānanda, tr. by V. A. Nerurkar, Act II, v. 9, p. 16.

of attention in painting. Painting, then, in addition to stimulating our power of visualisation and memory, concentrates our mind on the object of our portrait.¹ Painting is a source of sterling and unalloyed pleasure. It enables us to form a correct conception of space.

MUSIC

The genesis of music in India may be traced to the earliest period of her history, to the psalms of the Vedas. During the post-Vedic periods it underwent remarkable development till it became one of the crowning glories of Indian culture. Music may distinctly be classified into vocal and instrumental.² Nandikeśvara is of opinion that Brahmā learnt instrumental music, vocal music (song), and gesture from the Ṛk, the Yajus, the Sāma and the Atharva Vedas out of which he formulated laws of dancing for the achievement of supreme bliss.³ Music undoubtedly develops the physical, the emotional and the mental traits of human beings in their adolescence, when these traits are predominant. Music, especially instrumental music casts its spell even upon the young infants giving them an ecstasy of joy. Though their auditory sense develops earlier than other senses, yet they cannot discri-

¹ Samarāiccakahā, p. 23.

² Tāṇḍava Lakṣaṇam, vs. 283-2-285, 297-2-280-1, p. 59, vs. 327, 329, p. 63.

³ Nandikeśvara, Abhinaya Darpaṇa, p. 14.

minate musical tones and pitches unless they are sufficiently grown up to derive benefit from systematic musical training. We already noticed in our chapter on child psychology the practices of amusing the young infants by play-nurses by playing on musical instruments. Our earliest knowledge of music in our infancy is purely sensuous and not intellectual. Proper and systematic training in music, imparted to young children under experts refines their auditory sense, giving them the power of appreciation of music—vocal or instrumental, which is not possible for those to whom this privilege is denied.¹ Training in music, especially concerned with devotional prayers, rouses in us the religious trait. Music is again classified as Gāndharva and Gāna by Rāmāmātya. The Gāndharva music has been from eternity sung and practised by the Gandharvas and this music leads one to Mokṣa or spiritual salvation whereas Gāna or ordinary music, composed by Vāggēyakāras or those competent of composing and singing music, is called Deśī Ragas which give pleasure to the people.² Thus music—Gāndharva or Gāna either brings us spiritual salvation or sensuous pleasure. In brief, it rouses in the singer religious sentiment. The adolescent youths, especially of the nobility class, such as princesses utilize music in passing their time

¹ Rāmāmātya, Svaramelakalānidhiḥ, tr. by M. S. Ramaswami Aiyar, p. 46.

² *Ibid.*, p. 46.

in the midst of pleasure and merriment, peculiar to their age.¹ Thus music has got aesthetic value giving immense scope to the adolescents to develop their gregarious spirit or sociability; vocal music, relating to both the sexes, rouses either in the hero or in the heroine the erotic sentiment.² Music thus forms an important item not only in the programme of studies for the early adolescents to stimulate their emotional and mental development, but also it is of vital importance to fondle the young infants and children in the pre-school period under the careful and sympathetic guidance of play-nurse who gives them pleasure by stimulating their auditory sense. In a word, music—vocal or instrumental, Gāndharva or Gāna, is especially valuable in the social and the mental life of the growing child from its infancy to adolescence. Thus music, as an important item in any complete scheme of education, received a systematic, comprehensive, and the thoroughly scientific care in ancient India; and the result was a glorious consummation received by this most enjoyable fine art.

DRAMA

According to Rājā Rudradeva, dramatic performances as well as hunting excite the same

¹ Bhāsa, *Svapna-Vāsavadattam*, tr. by S. Subba Rau, Act II, p. 14, Act VI, pp. 43-44.

² *Tāṇḍava Lakṣaṇam*, p. 63.

emotions—a fact which is already noted in connection with our discussion of hunting. Dancing, as already remarked, originated in India with religion as in Greece. It has a distinctly religious association about it. It is of inestimable assistance to devotion. It assists the physical, the emotional, and the mental developments of the adolescents. The sense and the motor activities play a significant rôle in the display of marvellous feats in dancing, as is evident from the writings of Bharata's *Nāṭyaśāstra* and from Nandikeśvara's *Abhinaya Darpaṇa*. The following extract supports the above view: "O Dvijas, I shall describe the performance of these with the *Karaṇas*, and also how the actors are to combine the movements of the hands and feet in the several *Aṅgaḥāras* and *Karaṇas*; *Aṅgaḥāras* have their origin in *Karaṇas*. I shall describe these (*Karaṇas*). A *Karaṇa* in dance is the co-ordination of the movements of the hands and feet,"¹ and again "The song should be sustained in the throat; its meaning must be shown by the hands; the mood (*bhāva*) must be shown by the glances; rhythm (*tāla*) is marked by the feet. For wherever the hand moves, there the glances follow; where the glances go, the mind follows; where the mind goes, the mood follows, where the mood goes, there is the flavour (*rasa*)."² These two quotations emphati-

¹ *Tāṇḍava-Lakṣaṇam*, p. 19, vs. 18-20.

² *Nandikeśvara, Abhinaya Darpaṇa*, p. 17.

cally prove that the sense and the motor activities are the bases of dancing. Dancing refines the sense-perceptions of the young dancers and helps the symmetrical development of their body as well. In dancing aṅga, pratyaṅga, and upāṅga, the three principal divisions of the dancer's body are set in motion at different times differently in various combinations of aṅgaḥāras and karaṇas, as is evident from the writings of the authorities mentioned above. Thus the very interesting and universal acts of singing, dancing and dramatic performance were developed simultaneously in connection with religious practices. Devotion required and stimulated the developments of these fine arts or branches of a fine art very much as it did in ancient Greece. These arts are productive of the temper and the atmosphere in which devotional theologians and religious moods find a congenial environment. It has been noted in our chapters on child and adolescent psychology how the growing child up to his very adolescence is physically active being urged on by sense and motor activities.

Dancing is an important item in the scheme of adolescent education. We learn from the Abhinaya Darpaṇa, that the eyes, the brows, and the heads express the following emotions of the female dancers. Līlā or dalliance is indicative of feelings of love, anger and truth. This emotional trait is expressed in the utkṣipta dance by the

dancer by raising either one or both of the brows.¹ The kuñcita dance expresses the emotional traits of mottāyitām (display of affection), kuttamitam (giving vent to anger), vilāsa (pleasure of seeing the beloved) and kilakiñcitam (hysterics). In this dance one or both brows of the dancer are arched. The emotion of lalita, indicative of graceful posing, is expressed by the dancer through smiles, and the winking of the eyes caused by the movement of the brows.² All the aforesaid emotions save līlā and bibbokaḥ are also expressed by the dancer in the nihañcita dance when she touches the raised shoulder with the head, indicative of these emotions.³ The emotion of vibhrama (confusion or hurry) is expressed by the dancer while dancing by casting repeated glances, rolling the pupils, shedding tears and laughing unchecked in an excited mood.⁴ The emotion of viḥṛtam or bashfulness, expressed by the dancer with the head bent down, is indicative of modesty.⁵

MENTAL DISCIPLINE OF DANCING

Dancing as a medium of communicating ideas to each other was much in vogue in ancient India giving rise to a distinct branch of knowledge

¹ Nandikeśvara, *Abhinaya Darpaṇa*, p. 25.

² *Ibid.*, p. 24.

³ *Ibid.*, p. 20.

⁴ *Ibid.*, pp. 23-27.

⁵ *Ibid.*, p. 18.

known as Akṣaramuṣṭikā Kathanam and was one of the sixty-four arts.¹ This hand-language is current even today in India; and it is understood by the experts in the art of dancing. Dancing not only exerted a tremendous influence upon the physical and the emotional development of the young educand pursuing the course, but also stimulated his mental activities.

We propose now to dwell, in brief, on the mental training of the growing child all through its adolescence, through an ideal curriculum inclusive of languages, vedas, sciences, and pseudo-sciences. As we already pointed out in our chapter on intelligence, individuals of both the sexes differ from one another in native abilities as well as in courses of study. Consequently the programme of study should take into account the vital principle of individual differences. It will be pointed out in our chapter on vocational psychology that the individuals differ in vocational traits or abilities and that they follow their professions according to the natural bent of their mind after a thorough discovery of their abilities—general and specific through psychological tests. These discussions reveal adequately the soundness of the practices then in vogue, for the educational and vocational guidance of young scholars. We propose to discuss in brief, the practices pursued by some of the leading scholars and sages in imparting

¹ Nandikesvara, *Akṣaramuṣṭikā Darpaṇam*, p. 26.

their instructions to the proper mental fitness of the educand. Thus it is said in the *Mahābhārata* of a great sage, himself an orator, smart and talented, versed in the *smṛti* and poetry and that he taught some of his scholars philosophy (*adhyātma śāstra*) and some again mechanics (*vārtā-śāstra*) according to their mental capacities.¹ This was simply to follow the truth of Nature, the directions of Nature as it were. It is also mentioned in the *Vedāntasūtra* how a great professor adjusted his teaching to the intellectual equipment of his scholars.² Here was a concrete practice which many of its modern counterparts might do well to copy. Āryadeva in his *śataśāstra* speaks of the adaptation of the teachings of Lord Buddha to his three distinct types of pupils—some of superior intelligence, some of average intelligence, and some again of mediocre intelligence.³ It may be noted that Socrates also followed this practice of adapting his teachings to his followers. The *Aṭṭisamhitā* also recommends the curricular adjustment to the scholars, possessed of different levels of intelligence, as is evident from the following extract: "Those, failing to under-

¹ The *Mahābhārata*, ed. by Haridas Siddhantavagis, *Sabhā-parvan*, Canto V, com. to v. 4, p. 30.

² *Bādarāyaṇa*, The *Vedāntasūtra*, tr. by Rai Bahadur Srish Chandra Vasu, Adh. II, Pāda III, com. to Sūtra 45, p. 367.

³ Āryadeva, *Śataśāstra*, tr. by Guiseppe Tucci, p. 12.

stand the Vedas, study the Dharma-Śāstras; those, failing to master the Dharma-Śāstras, study the Purāṇas; those, failing to acquire proficiency in the Purāṇas, betake to agriculture; and those, failing in it, become Bhāgavatas."¹ Viśvanāth, a fourteenth century (1350 A.D.) scholar from East Bengal, asserts in his *Sāhitya Darpaṇa* that Dharma (religion), artha (riches), kāma (desires), and mokṣa (salvation) can be achieved through a study of the Vedas as well as of poetry. According to him poetry is generally pursued by those of better intelligence not competent to derive benefit from a careful perusal of the Vedas which are strictly reserved for scholars, possessed of superior intelligence and genius who, however, can study poetry for their mental relaxation. Thus according to Viśvanāth, mental ability is the determinant in the selection of the Vedic and the poetic studies.² There is a good deal of unfortunate confusion here. The Vedas themselves constitute poetry of a very sterling order. Probably the authority by "poetry" meant poetic composition devoted to light as opposed to serious themes. Poetry in the highest, and the truest sense of the term, constitutes the glory of Indian culture, the most cons-

¹ The *Dharmaśāstra* (The *Aṭhisamhitā*), ed. by Manmatha Nath Datta, Vol. I, para. 375, pp. 330-31.

² Viśvanāth, *Sāhityadarpaṇa*, ed. by Prof. Gurunātha Vidyānidhi Bhattacharya, and revised by Kalipada Tarkacharya, pp. 3-4.

picuous aspect of Indian literature, associated as it is, with the immortal names of Vālmīki, Vyāsa, and Kālidāsa.

EDUCATIVE PROCESS

The educational process includes the teaching as well as the learning process. Gotama in his Nyāya Sūtra defines teaching as the pupil's either receiving or imitating sounds from the preceptor.¹ Study, according to Aniruddha in his commentary, is learning the mere words of the spiritual sciences from the lips of the teacher in conformity with strict rules.² Strictly speaking, the definitions of teaching and learning given by Gotama in his Nyāya Sūtra and by Aniruddha in his commentary are identical in thought, as both imply the pupils, learning the words uttered by the teacher. In reality, in teaching, the teacher is active in his mental endeavour, when he attempts to adjust his teaching to the mental equipment of his scholar to produce the desired result. If the first instruction fails to be effective, the teacher repeats the process till the desired result is gained, as is evident from the following extract: "And, if knowledge is not produced from once instructing, then a repetition of the instruction is to be made; to which

¹ Gotama, The Nyāya Sūtra, tr. by MM. Satis Chandra Vidyabhusana, para. 159, p. 51.

² Aniruddha's Commentary, tr. by Richard Garbe, p. 136.

effect he adduces another story.¹ Repetition is essential in the learning process. This point is emphasised by poet Māgha in his *Śiśupālavadham* where he mentions that repetition of the science of politics is essential only to strengthen it firmly in the mind of the educand, even though possessed of thorough command over it.² The same point is stressed again by Śaṅkarācārya in his *Upadeśasahasrī* as follows: “*parīkṣitāya brūyāt punaḥ punaḥ yāvat grahaṇam dṛḍhibhavati.*”³

Kapila in his *Sāṃkhya Aphorisms* emphasizes the importance of repetition to ensure the effectiveness of teaching upon the mind of the pupil. This repetition in teaching is to be introduced through identical story.⁴ To illustrate this point Kapila mentions on the authority of the *Chāndogyopaniṣad*, how Āruṇi instructed Śvetaketu repeatedly to ensure his instruction upon the plastic mind of his young pupil.⁵ Gotama in his *Nyāya Sūtra* emphasises the practice of repetition in teaching to ensure lasting impression upon the

¹ Kapila, *The Sāṃkhya Aphorisms*, tr. by James R. Ballantyne, pp. 236-87; Kṛṣṇa Yajurvediya *Amṛtavindūpaniṣad*, tr. by M. C. Pal, p. 1.

² Magha, *Śiśupālavadham*, ed. by Haridas Siddhanta-vagis, Canto II, v. 75, p. 87.

³ *Śrīmacchāṅkara, Upadeśasahasrī*, tr. by Akshaya Kumar Sastri, p. 3.

⁴ Kapila, *op. cit.*, pp. 286-87.

⁵ *Ibid.*, p. 287.

mind of the young scholar. He illustrates the point by citing the colour and the auditory perceptions. Thus when an educand sees certain colour five times repeatedly, and hears sound repeatedly it signifies that he sees the same colour and hears the same sound. Similarly when he reads a certain chapter ten or twenty times, it becomes that he is repeating the same lesson all the time.¹ The Brahma Sūtra also supports the above view.² Thus educative process in ancient India was based on a comprehensive knowledge of the psychology of human nature; and its regulations were perfectly scientific and positively practical. The ancient educators understood thoroughly the difficulty and the gravity of the task of educating young pupils at the most plastic stage of their life; and they faced their task boldly and in a thoroughly practical spirit. They identified themselves with their young learners; and looked at things from their angles of vision. This is exactly what all educators should do. According to the Nyāya sūtra repetition of study means repeating the lesson³ uninterruptedly by constant reading of it, attentively listening to its exposition and reflection over it.

¹ Gotama, The Nyāya Sūtra, tr. by Ganganath Jha, p. 216.

² The Brahma Sūtra tr. by Vireswarananda Swami, pp. 46, 446.

³ Gotama, *op. cit.*, Sūtra 47, p. 498

The young scholar not only repeats the instruction of his preceptor but also imitates him. Imitation was much in vogue among young learners in hoary antiquity even during the time of the *R̥gveda*. A verse of the *R̥gveda* runs: "when one of you imitates the croaking of another as a learner (imitates) his teacher, when loud crying, you converse (leaping) upon the waters, then the entire body is as it were developed."¹ The *Nyāya Sūtra* also supports the view that imitation plays an important role in the education of a child in learning the scriptures and the fine arts such as dancing.² The child instinctively imitates the adult in acquiring knowledge from its environment in an important manner. The growing child in his boyhood and early adolescence imitates his teacher intelligently. Kālidāsa in his *Mālavikāgnimitram* mentions how Mālavikā learns dancing by imitating the demonstrations given by Gaṇadāsa, her professor, who was lavish in his praise of the marvellous feats of the royal pupil.³ Thus we see that repetition, habit and imitation are closely connected, for, repetition is impossible without proper formation of habit and imitation. We repeat again and again the useful precepts which we imitate from our preceptor. The Śābara Bhāṣya recommends the

¹ The *R̥gveda Samhitā*, tr. by H. H. Wilson, Aṣṭaka 5, Adh. 7, Vol. IV, v. 5, p. 203.

² The *Nyāya Sūtra*, tr. by Ganganath Jha, Vol. II, p. 83.

³ Kālidāsa, *Mālavikāgnimitram*, Act. I, v. 5.

repetition of useful things.¹ We have no doubt that this is an excellent piece of recommendation. This was a very indispensable medium of the acquisition of knowledge in those days before the art of printing.

The teacher must not only be mentally active and repeat things to his young scholar again and again till the instruction becomes effective,² but also the educand must be attentive to receive the precepts from the teacher. The pupil must fix his mind upon the teaching of the preceptor. Attention³ is a fact of paramount importance in the acquisition of knowledge of whatsoever type. Attention plays a significant role in the teaching as well as in the learning processes. Śaṅkarācāryya defines attention as fixing the mind on some specific object.⁴ Mind is at the root of all our actions—mental and physical.⁵ According to the Chāndogyopaniṣad the mind functions through the will which sets the mind on thinking and in speaking.⁶ In the next stage of our mental life we are guided by con-

¹ Śabara Bhāṣya, tr. by Ganganath Jha, Vol. 11, bhāṣya to sūtra 13, p. 770.

² Māgha, Śiśupālavadham, Canto 11, v. 75, p. 87.

³ Kapila, The Sāṅkhya Aphorisms, tr. by James Ballantyne, p. 308.

⁴ Śaṅkarācāryya, The Sarva Siddhānta Saṅgraha, tr. by M. Rangacarya, v. 39, p. 48.

⁵ Chāndogyopaniṣad, tr. by F. M. Muller, Part I, p. 111.

⁶ *Ibid.*, p. 112.

sideration. Reflection is very important in our mental life, especially in grasping the import of the preceptor's teaching. Kapila illustrates the point by citing the case of Virocana who could not derive benefit from the instruction of Prajāpati. The following verse from Kapila's Sāṃkhya Aphorisms supports our view :

“ Nopadeśaśravaṇe'pi kṛtakṛtyatā
Parāmarśādṛte virocanaavat”.¹

Reflection was then, and it is now, and it will be always the sole source of higher knowledge; it is that which enables us, step by step, to rise from the sensuous to the supersensuous plane: it leads us from the earth to heaven, consequently it was very natural for the ancient to realise its importance.

According to the Brahma Sūtra meditation and reflection signify the rehearsing of the same thought in mind. Really speaking, it is a sort of mental exercise. Meditation on a subject, according to this authority, implies the remembrance of it without a break. Meditation and reflection then signify the repetition of the mental act, *i.e.*, instruction.² Reflection is possible only through will. According to the Nyāya Sūtra attention is the

¹ Kapila, The Sāṃkhya Aphorisms, tr. by J. R. Ballantyne, pp. 298-99; Aniruddha's Commentary and The Original Parts of Vedāntin Mahādeva's Commentary on the Sāṃkhya Sūtra, tr. by Richards Garbe, p. 168. v. 170.

² The Brahma Sūtra, tr. by Vireswarananda Swami, p. 446.

fixing of mind upon an object to recall something in our mind and the thinking of the connotation of the thing to be recalled. Recollection, again, is impossible without fixing our thought upon previously known events. Naturally then, in association, we group several things in an arranging order and we try to associate the things to be remembered with the series in order to recall in our mind things to be remembered. In this memory or retentiveness plays a significant part. Thus all the factors of knowledge and all the stages in learning described by modern psychology are anticipated by the authorities in the field of education in ancient India. They fully realised the supreme importance of the scientific knowledge of the human mind as an indispensable preliminary to any sound theory and practice of education.

Attention which is so essential in the learning process includes memory, reflection or will and association. The following extract bears us out: "(a) Attention—the Fixing of the Mind, with the desire to recollect something, and the pondering of the peculiarities of the thing desired to be recalled—is a cause of Recollection. (b) Association—is either (1) the arranging of several things in a connected chain, things so connected bringing about the recollection of one another, either, in the order in which they have been arranged, or in some other order; or (2) the fixing of things (in the plexuses of the Body) to be remembered with those already

known,—such connecting being done with the help of the Science of Concentration (yoga).—(c) Retentiveness—the Faculty produced by the repeated cognitions of like things; and this quality of Faculty, belonging to the soul, is called Retentiveness''.¹ The Chāndogyopaniṣad assigns supreme place to 'understanding' (vijñāna) in grasping the meaning of the Vedas, the itihāsas, the purāṇas and other branches of learning—sacred and secular.²

The Sāṃkhya philosophy describes, Tāra, Sutāra, Ūha, Tāra-tāra, Ramyaka and Dāna—the six steps in the learning process. The first step also called Adhyayana, is the acceptance of the inner meaning of the letters of the vidyās or truths about the self from the mouth of the teacher. The second step is the cognition of the sense or object produced by sound. The third step is either reasoning or critical examination of the meaning of the Vedas by advancing arguments. The fourth step is the thinking process following argument. The fifth step is formal discussion with the Guru, his disciples and fellow students to remove doubts about the truth. This is strictly speaking the conference method, so popular with the modern American educationists. Dāna or the sixth step is concerned with the knowledge of prakṛti and puruṣa. Briefly speaking, in the first step the

¹ The Nyāya Sūtra, tr. by Ganganath Jha, bhāṣya to sūtra, 41, p. 377.

² Chāndogyopaniṣad, tr. by F. M. Muller, Part I, p. 115.

pupils receive instruction from their preceptor by hearing and imitating him. Next they recognise the meaning of the word. In the third and the fourth stages they reason and think about it. In the fifth stage they verify the truth of the instruction by removing doubts by open discussion with the preceptor and other associates and the final knowledge is concerned with the supreme soul and prakṛti.¹ Here is a perfectly thorough and comprehensive theory of knowledge having its foundation in psychology leading us from the positive knowledge of science to the higher knowledge of the ultimate principle underlying universal process which is the concern of philosophy.

It is clear that teaching in ancient India was based on a sound psychological principle, and it was remarkably adjusted to the needs and capacities of the pupils. Instruction was not enforced upon an unwilling mind. Blind memory work was discarded. In the Mahābhāratam blind memory work was bitterly assailed by Duryodhana and nobody was considered to be a sound scholar who stores his mind with the bookish knowledge of others, as is evident from the following verse in the Mahābhāratam :

“ Yasya nāsti nijā prajñā kevalantu bahuśrutāḥ
Na sa jānāti śāstrārtham darvī sūparasāniva.”²

¹ The Sāṃkhya Philosophy, tr. by Nanda Lal Sinha, p. 320.

² The Mahābhāratam, ed. by Haridas Siddhantavagis, Sabhāparvan, Canto 53, v. I, p. 446.

Lord Buddha himself in the fifth century B.C. vehemently assailed blind memory work¹—a fact pointed out in my article on “Lord Buddha and His Educational Philosophy.”² Yāska, the earliest commentator of the R̥gveda in his Nirukta, a commentary on the Nighaṇṭu, the earliest collections of the Vedic glossaries criticised the mere memory work. According to this authority sound and proper education should develop the reasoning power of the educand and not store his mind with mere words. According to him mere routine work amounts to cramming. He illustrated his point by citing the example of the Vedic scholar who does not understand the real meaning of the Veda after studying it.³ The Jaina Sūtra also supports the above view in advocating the five steps in the learning process as follows: (1) “saying or learning one’s lesson; (2) questioning the teacher about it; (3) repetition; (4) pondering; (5) religious discourse.”⁴ Thus the importance and the status of memory in the process of the acquisition of knowledge were rightly understood and assessed. This discussion, we believe, will remove the

¹ *Silācāra Bhikkhu*, *Majjhimanikāya*, Vol. 1, pp. 167-68.

² D. C. Dasgupta, *Lord Buddha and His Educational Philosophy*, *Prabuddha Bharat*, Feb. 1940.

³ *The Nighaṇṭu and the Nirukta*, tr. by Lakshman Sarup, p. 18.

⁴ *The Jaina Sūtra*, tr. by Hermann Jacobi, Part II, para. 4, p. 179.

illusion that the ancients in India attached too much importance to memory and too little importance to intelligence. They cultivated the powers of memory by all means; and memory is the strongest point about them. But they did not sacrifice intelligence at the altar of a sheer blind memory. Interest and intelligence should be stimulated in a pupil to give him sound education. These two factors are incalculable assets to a learned man. This truth is emphasized in the Mahābhārata when Uddhava exhorted Śrī Kṛṣṇa to rouse in him intelligence and interest. This point is stressed by Māgha in his Śiśupālavadam in the following verse :

“ Prajñotsāhavataḥ svāmī yatetādhātumātmani
Tau hi mūlamudeśyantyā jigīṣorātmasampadaḥ.”¹

Āryaśūra, another authority, while describing the education of Buddha in his boyhood hints at the identical thought in the Jātakamālā. According to Āryaśūra, young Buddha not only possessed superior intelligence but also he took keen interest and zeal in learning. Excellent technique or method was followed by the teacher in rousing in the young scholar his innate intelligence and interest as a result of which he mastered the eighteen branches of learning and fine arts.² These illus-

¹ Māgha, Śiśupālavadam, ed. by Haridas Siddhanta-vagis, Canto 11, v. 76, p. 88.

² Āryaśūra, The Jātakamālā, tr. by J. S. Speyer, p. 2.

trations prove beyond doubt, that the ancient scholars knew full well that the brilliant pupils must not only possess superior intelligence, but also keen interest in order to succeed in their academic career.

The art of teaching in ancient India followed the evolutionary process of proceeding from the simple to the complex. This is a process in the right direction following in the footsteps of Nature. Sanatkumāra while teaching Nārada began with simple concrete thing gradually teaching him more and more difficult subjects culminating with the knowledge of Brahman.¹ It is clear that a sound system of theory with its background in psychology, governed the practice of the education of the young in India. The child was educationally happy—as happy as could be. Kumārila Bhaṭṭa in his Śloka-vārttika stresses the identical method of teaching the young beginner first a letter then a word, finally a sentence while giving instructions in the Vedas.² This method was sharply criticised by the modern specialists in educational psychology on the ground that when we see an object, we see it in its entirety before we see it in details—a fact also discussed in our chapter on perception. In spite of the aforesaid limitation, this method has its

¹ The Brahma Sūtra, tr. by Vireswarananda Swami, p. 97.

² Kumārila Bhaṭṭa, Śloka-vārttika, tr. by MM. Ganganath Jha, p. 273.

advantages in teaching young beginner. Pestalozzi, the famous Swiss educational reformer of the early nineteenth century adopted this method in teaching little children at Yverdon.

TEACHING THROUGH SENSE-PERCEPTIONS :

Sense-perceptions play a significant role in the education of the scholar, especially the beginner—a point already elaborately discussed in our chapter on sensation. Pure sensation, however, does not give us a correct notion about an object : it must pass through perception. Sense-perception must be followed by cognition and constructive thought to give us a correct knowledge of an object. Constructive thought deals with imagination.¹ According to Āśvaghoṣa, the famous Buddhist Scholar of the first century A.D., sense activities do not give us a correct knowledge of the objects around us without forming images about them in our mind.² Senses do not function properly without imagination. There are as many cognitions as there are sensory organs.³ These aforesaid methods were adopted in teaching young learners the vedas, the eighteen sciences and the fine arts—in fact the entire encyclopaedic knowledge of the ancient Hindus. Thus

¹ Stcherbatsky, *Buddhist Logic*, Vol. II, p. 45.

² Āśvaghoṣa, *Saundarananda*, tr. by T. H. Johnston, Canto XIII, vs. 49, 53, p. 76.

³ Gotama, *Nyāya Sūtra*, tr. by Ganganath Jha, Vol. II, p. 40.

Gotama in his Nyāya Sūtra mentions repetition as essential in giving the young educand a training in sense-perceptions such as perceptions in colour and sound.¹ This sense-training undoubtedly concerns the education of children during the pre-school period. We learn from Patañjali's Yogadarśana that the method was in vogue to teach alphabets to young learners.² Gotama tells us in his Nyāya Sūtra that repetition should be allowed in the study of science.³ Sciences include the study of śāstras as well as śilpas or fine arts.⁴ Hence imitation is followed in learning śāstras as well as fine arts. Māgha, the famous poet, in his Śiśupālavadham tells us that the study of the Sāma-veda is impossible without 'attention.'⁵ The same poet recommends 'repetition' to be followed habitually in the mastery of the sciences and the fine arts as is evident from the following verse :

“ tvaṣṭuḥ sadābhyāsagr̥hītaśilpavijñānasampatpra-
sarasya sīmā
adṛśyatādarśatalāmaleṣu chāyeva yā svarjaladher-
jaleṣu.”⁶

¹ Gotama, Nyāya Sūtra, p. 84.

² Patañjali, Yogadarśana, ed. by Hariharananda Aranya, Sūtra 38, p. 353.

³ Gotama, *op. cit.*, Sūtra, 47, p. 498.

⁴ Vedavyāsa, Agnipurāṇam, ed. by Panchanan Tarkaratna, v. 50, p. 718.

⁵ Māgha, Śiśupālavadham, Canto XII, p. 496, v. 11.

⁶ *Ibid.*, Canto III, v. 35, p. 129.

Kumārila Bhaṭṭa recommends repetition and sense-perception to be the means of learning music.¹ According to Bhāsa 'attention' is essential in learning music. This is evident from his description of the failure of Vāsavadattā to follow the instruction of Udayana in musical instrument—a fact revealed by the king himself in his conversation with Vidūṣaka.² Repetition is also essential in learning philosophy as is illustrated in the 'questions of King Milinda' where it is stated that Nāgasena learnt by heart the entire Abhidhamma by repeating it only once.³

A reflective study of the method, followed in the teaching and the learning processes of ancient India, reveals the important truth that the ancient seers of India, not only advocated a novel method of teaching and learning based on sound psychology but also actually carried them into practice.

The educational programme of the growing child is carefully planned out to suit its physical, emotional, and mental needs. Especially the curriculum of the adolescents of both the sexes was planned out in such a way as to suit their physical, emotional, and mental traits. This also is evident

¹ Kumārila Bhaṭṭa, *Tantravārttika*, Adh. I—Pāda III.—Adh. IX, also tr. by Ganganath Jha, Vol. I, p. 308.

² Bhāsa, *Svapna-Vāsavadattam*; tr. by S. Subba Rau, Act V, p. 37.

³ *Questions of King Milinda*, tr. by T. W. Rhys Davids, Vol. I, p. 21.

from our discussion of the curriculum, prescribed for them. Intelligence or heredity was the standard of curricular selection and members of the fair sex were allowed to pursue the same curriculum if proved competent to derive benefit from a study of it.

The ancient educators of India also realised the importance of an ideal environment or nurture for the fullest development of the intelligence of the scholars. To ensure this development in an ideal environment, they prescribed proper nourishing diet not only for infants but also for adolescents especially of those who could afford to provide as is evident from the case of Lord Buddha. Education was imparted to scholars of superior intelligence in an ideal environment and instruction was offered to deserving scholars in a fit season of the year. The climatic factor played a significant part in determining appropriate courses of studies to scholars in a fit season of the year as is evident from the *R̥gveda*¹ and the *Manu Samhitā*.² Lord Buddha's father built for him three magnificent palaces named Rāma, Surāma and Subhata³ at Kapilāvastu for different seasons of the year. The first palace was built for

¹ The *R̥gveda Samhitā*, tr. by H. H. Wilson, Vol. VI, v. 5, p. 75.

² *Manu's Code*, tr. by G. Bühler, vs. 95-98, pp. 143-44, vs. 113-115, p. 147; D. C. Das Gupta, *Manu and His Educational Philosophy*, Prabuddha Bharat, April and May, 1943.

³ *Buddhavaṃśa*, tr. by Dr. Bimalachurn Law, p. 84.

the winter, the second for the summer, and the third for the spring and the autumn. Each of these palaces was surrounded by gardens with tanks and delightful streams of water, and the whole environment was pleasant to the senses.¹ The Romantic Legend of Śākya Buddha tells us how three magnificent palaces for the above seasons were also built by a rich man of Benares for his son, Yaśada.² The Nidānakathā tells us how the father of the Bodhisat built three magnificent palaces for three seasons respectively nine storied, seven storied, and five storied.³ Taking all these facts together we can safely conclude that Rāma, the nine-storied palace was for the winter, Surāma the seven-storied palace for the summer and Subhata, the five-storied palace for the spring and the autumn. The Manual of Buddhism, a Ceylonese source subscribes to the above view.⁴ In conclusion, we may add that education in ancient India was admirably fitted to the needs of the growing child, although its adolescence and it was raised in a typical environment to ensure its physical, emotional, and mental developments.

¹ The Romantic Legend of Śākya-Buddha, tr. by Samuel Beal, p. 78.

² *Ibid.*, p. 262.

³ Nidānakathā, The Story of the Lineage, tr. by T. W. Rhys Davids, p. 165.

⁴ Manual of Buddhism, tr. by R. Spence Hardy, p. 151.

CHAPTER X

VOCATIONAL PSYCHOLOGY.

The modern ideal and practice of applying sound psychological principles to vocational education were vogue in ancient India. The ancient theorists—Hindu, Jaina and Buddhist—realised the paramount importance of adjusting the workman to his work. Then, as now, the arts had a solid basis in science. In the present chapter we propose to show how our ancestors harnessed a completely consistent and sound system of vocational psychology, in the service of arts, from the dawn of the vedic civilization downwards.

The association of vocational psychology with arts makes its appearance at the earliest phase of the vedic civilisation; and there are repeated references to specific talents required for specific vocations in the vedic text. There was specialisation within specialisation. The special profession of the priest needed peculiar types of skill for satisfactory performance of the duties attached to it in its different branches. The skill in priest-craft proper, the skill in the performance of the sacrificial rites, and the skill in chanting were developed, and fostered by the prevalence of specialism even in those days of the encyclopaedic ideals. This proves unmistakably that specialisation was much

in vogue in the vedic period; and the specialists made their choice of vocation according to their natural bent of mind. Thus is mentioned in the R̥gveda of 'skilful-priests,'¹ 'skilled in rites'² and 'skilful chanter.'³ These vocations are connected with the leadership in the church.

Defence is a supreme necessity of the State in all ages. It was all the more so in the vedic and the immediately succeeding ages, when India had to be constantly defended against foreign invaders. The necessity of defence called into being the art or science of fighting, with its multitude of branches needing the application of specialised skill.

The management of the cavalry and the management of chariots were two very important branches of the science of warfare; and these were greatly fostered and developed in the very early period of Indian history. We have textual evidence of it in the vedas in support of our contention. That the vocation of fighting or warfare was hereditary is indicated by the expression 'skilled in paternal weapons.'⁴ Horses and mares were freely used in ancient warfare. Consequently the training of horses developed into a distinct branch of science in ancient India; and Indian literatures abound in references to horse-trainers. The R̥gveda also

¹ R̥gveda, tr. by H. H. Wilson, Vol. V, v. 57, p. 382.

² *Ibid.*, Vol. VI, v. 5, p. 4.

³ *Ibid.*, Vol. V, v. 22, p. 370.

⁴ *Ibid.*, Vol. VI, v. 8, p. 17.

mentions horse-trainers in the expression as 'well skilled in horses.'¹ Mares also were all well disciplined² for war purposes. Chariots were not only used for transportation but also for active military duties properly so called. Consequently charioteering was developed into a distinct branch of occupation demanding special technical knowledge and skill from charioteers even in the time of the R̥gveda. The repeated use of the expression 'skilful charioteering'³ supports our view. Not only charioteering but also chariot-making developed into a technical subject, requiring special efficiency and skill for the vocation.⁴ Smithy also grew into a distinct occupation demanding special skill⁵ from smiths. Specialisation was in vogue even among cow-herds. Thus the occupation of milkmen demanded the possession of manual skill on their part while engaged in milking cows. Thus the phrase 'skilful handed milker'⁶ suggests technical knowledge and efficiency, developed in the profession. Very naturally, each profession or occupation required special skill and technical knowledge, and we get clear evidence of it in the R̥gveda.

¹ R̥gveda, Vol. V, tr. by H. H. Wilson, v. 3, p. 113.

² *Ibid.*, Vol. III, v. 3, p. 2.

³ *Ibid.*, Vol. IV, v. 6, p. 25.

⁴ Atharva Veda Samhitā, tr. by W. D. Whitney, Vol. I, v. 6, p. 92.

⁵ *Ibid.*, loc. cit.

⁶ *Ibid.*, Vol. I, v. 7, p. 438; *Ibid.*, Vol. II, v. 4, p. 556.

Latter ancient Indian writers subscribed to the vedic view in their demarcation of the specific abilities in different branches of study—academic, scientific and vocational. We propose to describe some of the specific abilities for different subjects and vocations, before we turn our attention to the description of vocational guidance that was in vogue in ancient India. First of all, let us devote our attention to the description of specific skills and abilities needed in vocations concerning the elementary needs of life—food, clothing and shelter.

THE ELEMENTARY NEEDS OF LIFE

The elementary needs of man are of great importance, for, although men must not live by 'bread alone'; he must have, nevertheless, bread. He must live before he can think and philosophise. The body must be sustained before the soul in it can reveal in the higher realm of spirit. The most obvious need of man is food. It is a sign of the greatness of the Indian Civilisation that the problem of food received a thoroughly scientific consideration in it. There grew up a distinctly separate art of preparing food with its basis in science. Thus cooking developed into a culinary art;¹ and it demanded special skill from the cook. We learn of it from Bhīma's speech, delivered before the

¹ Sukraniti, tr. by Benoy Kumar Sarkar, vs. 315-16, p. 80.

assemblage of his brothers, where he assured them, of the sureness of his success in securing an employment in the kitchen of Virāṭarāj for his unrivalled skill in the culinary art. The speech runs thus :

“ sūpānasya kariṣyāmi kuśalo'smi mahānase
kṛtapūrvāṇi jairasya vyañjanāni suśikṣitaiḥ ”¹

Kathāsaritsāgara also mentions special skill in the culinary art,² which gradually grew into a distinct science. According to Suśruta a successful cook must be beautiful, diligent, capable of hard work, possessed of intelligence—general and specific, good demeanour, purity of character, courage, and a religious mind. He must be healthy, adept in the art of healing. Moreover, he must be smart, skilful, possessed of acute auditory sense with control over his self.³ Briefly speaking, a competent cook must be physically, mentally and morally sound, possessed of good moral traits. This grand ideal of the culinary art or the science of cooking deserves the thorough study and reflective consideration of the modern. Nowhere outside India, this

¹ The Mahābhāratam, ed. by Haridas Siddhantavagis, Vol. IX, Virāṭa-parvan, Canto II, v. 2, p. 11.

² Kathāsaritsāgaraḥ, Āditastaraṅgaḥ, 49, Taraṅgaḥ, 6, v. 44, also tr. by C. H. Tawney, Vol. I, p. 461.

³ Suśruta Saṁhitā, Vol. II, p. 675 ; Girindranath Mukhopadhyaya, The Surgical Instruments of the Hindus, Vol. I, p. 44 ; The Garuḍa Purāṇam, ed. by Manmatha Nath Datta, pp. 331-32.

vitally important art was considered with so much delicacy, subtle skill, and thought.

After food, the paramount need of man is clothing : man is, indeed, ' a clothed animal.' And this elementary necessity led to the development of the art or the science of weaving. Success in weaving depends much upon specific talent. In ancient India, the art of weaving was also pursued by men other than weavers, possessed of peculiar talent for the profession which resulted in larger output. This is clear from a passage in the *Kathāsaritsāgara* where in reply to a King's speech one of the audience thus replied : ' I am a *Pañcaphuṭṭika* by name, a *Śūdra* ; I possess a peculiar talent ; I weave every day five pairs of garments.' ¹ An identical idea is expressed in *Kārikāvali*.² Garment-making or tailoring required superior intelligence and skill.³

The third necessity of man is the necessity of a house where to shelter himself against the inclemency of the weather. As men multiplied, this need came to be more and more keenly felt ; and it was at the root of the wonderful art of

¹ *Kathāsaritsāgara*, *Āditastaraṅgaḥ*, 52, *Taraṅgaḥ*, 2, v. 99, also tr. by C. H. Tawney, Vol. I, p. 499.

² *Pañcānana Viśvanātha*, *Kārikāvali*, *Muktāvali*, *Dinakariya* and *Rāmarudriyasu*, ed. by Anantakumar Sastri, p. 42.

³ *Dhammapada Commentary*, Vol. III, p. 120 ; *Varāhamihira*, *Bṛhat Jātaka*, tr. by R. Subrahmanya Sastri, p. 297.

architecture which has contributed so much to the glory of India. Building-industry in ancient India was a distinct branch of science, receiving an honourable place in the curriculum of the art school. It was one of the sixty-four arts. According to the ancient ideal an architect must be intelligent,¹ possessed of superior intelligence. Hemacandra, a great Jaina scholar of the 12th century A.D. tells us how a king enquired of a stranger, among many other questions, if he possessed skill or adeptness in building-work such as, shrines, palaces and mansions.² Taking together the views of Merutuṅga Ācārya in his *Prabandhacintāmaṇi* and of Hemacandra in his *Triṣaṣṭiśalākā-puruṣacaritra*, we arrive at the conclusion that an architect must be intelligent, possessed of manual skill. That is, native ability and manual skill are the two factors that count for success in the vocation of architecture. We learn also from the Buddhist source how architectural work demands earnestness in effort,³ skill and power of execution from a builder. Building-construction reached the status of a distinct branch of science and it was offered in Buddhist

¹ Merutuṅga Ācārya, *The Prabandhacintāmaṇi*, tr. by C. H. Tawney, p. 162.

² Hemacandra, *Triṣaṣṭiśalākā-puruṣacaritra*, Vol. II, p. 191.

³ *Questions of King Milinda*, tr. by T. W. Rhys Davids, Part II, p. 283.

monasteries, especially in Gorsinga.¹ Buddhist monks were great architects. Thus Moggallāna, the great, possessed of supernatural power, skill and efficiency in architectural work, built a grand monastery for Visākhā to be dedicated to Lord Buddha.² The Buddhist priests also used to hold the important post of navakamma³—the superintendent of buildings.

HIGHER NEEDS OF LIFE

We shall now devote our attention to the description of abilities—general and specific, needed in vocations concerned with the higher needs of life. At the head of these higher needs, stands the art of writing. This it is, which differentiates the civilised man from the sheer barbarian. This is the first index of the commencement of the life of a higher culture. Writing requires special skill as is evident from the Kalpasūtram⁴ and the Bṛhat-jātaka.⁵ We learn from Buddhist sources that

¹ Śvayambhupurāṇam, ed. by MM. Haraprasad Sastri, p. 323.

² Dhammapada Commentary, Vol. II, p. 80.

³ The Vinaya Text, tr. by T. W. Rhys Davids and Hermann Oldenberg, Part III, Kullavagga, p. 214.

⁴ Sthavira Ārya Bhadra Bahu Swāmī, Bṛhat Kalpasūtram, Vol. V, edited by Guru Sri Chaturvijaya and His Śiṣya Punyavijaya, p. 1361.

⁵ Varāhamihira, Bṛhat Jātaka, tr. by V. Subrahmanya Sastri, pp. 301, 336.

accountancy also demands skill and efficiency¹ from a successful accountant. Then the necessity of the cultivation of poetic imagination in creative art makes its appearance late in the cultural history of India. This was followed by the necessity of the cultivation of skill in moral philosophy. According to Mammaṭa, a successful poet must possess a poetic genius²—a peculiar faculty without which writing poetry is impossible. Vidyāpati Ṭhākura emphasises the importance of special skill and adeptness in moral philosophy and in truth in all accomplishments.³ Not only in secular literature but also in scriptures it requires special skill⁴ on the part of the teacher to expound its meaning.

Medicine, nursery, minerals, jewellery, metallurgy, stone-work, gardening, agriculture and other sciences make similar demand upon native abilities and specific skills of scholars and workers. In the Rāmāyaṇa is mentioned specific skill for the medical profession as is evident from the following quotation: “physicians in their business skill.”⁵ Specialisation was in vogue in

¹ Further Dialogues of The Buddha, tr. by Lord Chalmes, Vol. II, p. 155.

² Mammaṭa, Kāvya-prakāśa, tr. by Ganganath Jha, p. 2.

³ Vidyāpati Ṭhākura, The Test of a man, p. 130.

⁴ Kunda Kunda Ācārya, Pravacanasāra, ed. by A. N. Upadhye, para. 63.

⁵ The Rāmāyaṇa, tr. by Ralph. T. H. Griffith, p. 228,

the medical science in ancient India. As is evident from the Buddhist source specialisation came into being in connection with the cure of arrow-wounds demanding special skill from the surgeon. "His friends and kinsfolk were to get a surgeon skilled in arrow-wounds."¹ Suśruta, the famous Hindu physician of antiquity mentions physical, emotional and mental traits as essential qualifications for success in medical science. According to him a medical practitioner must be physically clean, swift-handed, mentally and morally sound and ready-witted, possessed of courage.² To succeed in the medical profession, a surgeon must be light-handed, possessed of courage, for, surgery required manipulative skill and courage.

Nursery also grew to be a distinct branch of science, as is evident from Lord Buddha's emphasis on five qualifications, demanded of a trained nurse. Thus, according to the Lord a qualified nurse must possess superior intelligence not only to prescribe proper medicine and diet for the patients but also to amuse them with religious discourse. Moreover, a competent nurse must be humane, possessed of social intelligence, and readily willing to nurse the sick.³ According to Suśruta, however, a competent nurse must be physically and morally

¹ Further Dialogues of The Buddha, Vol. II, p. 124.

² Suśruta Saṁhitā, Vol. I, p. 306.

³ Vinaya Text, Vol. II, Mahāvagga, VIII-26-5, pp. 242-43.

sound. A typical nurse must be of middle stature, middle aged, possessed of sound health, good character and of a steady mind.¹ The Jaina source also tells us that nurses should be "skilful and accomplished, well trained."² This grand ideal of the nurse must leave the moderns in despair. Our modern ideal of training the nurse looks very very poor, if not mean, compared with its ancient Indian counterpart.

The cultivation of sciences requires special skill as is evident from Vimalasūri's *Pauma Cariyam*.³ We learn from the *Rāmāyaṇa* that the jewellers possess skill necessary to success in jewellery—"And artists skilled in gems to deal."⁴ Specialisation, however, was developed in jewellery, requiring special skill such as appraising gems. This is evident from the following extract: "Cāru, staid and cool, a skilled appraiser, accumulated, a complete assortment of jewels in their different colours."⁵ This proves unmistakably that an appraiser of gems must possess a special skill of

¹ *Suśruta Saṁhitā*, Vol. I, p. 307. Vol. II, pp. 225-26; *Caraka Saṁhitā*, Vol. I, p. 863.

² *The Antagaḍa-Dasāo and Aṇuttarovavāiya-Dasāo*, p. 29.

³ *Vimala Sūri, Pauma Cariyam*, tr. by B. A. Chaugule and N. V. Vaidya, v. 4, p. 10.

⁴ *The Rāmāyaṇa*, tr. by Ralph T. H. Griffith, p. 331; *Triṣaṣṭīśalākā-puruṣacaritra*, Vol. II, p. 191.

⁵ Maurice Bloomfield, *The Life and Stories of the Jaina Saviour Pārśvanātha*, p. 164.

sense-perceptions. Śukrācārya, a much earlier authority, holds a similar view.¹

Not only gems but also metal-works such as silver, gold, iron, copper and others demand special skill and efficiency from the experts.² The Buddhist source also supports the same view.³ The job of a turner who manufactures the turn of the wheel requires specific skill.⁴ Sculpture or the manufacture of statues, and the slinging of stone, demand adeptness,⁵ skilfulness,⁶ and artistic skill⁷ or efficiency from the workers.

GARDENING

Gardening (Udyānakarma) and the treatment of plant disease (Vṛkṣacikitsā) are mentioned in the Hindu and the Jaina literatures as the items of study in the Śilpa curriculum. Vidyāpati Ṭhākura mentions in his 'The Test of a Man' how floriculture requires skill on the part of a florist. He illustrates his point by citing the case of Kṛtakuśāla, a renowned florist, possessed of skill in his craft. As a result of skill in his craft, his output was

¹ Śukranīti, vs. 171-72, p. 144.

² Triṣaṣṭīśālākā-puruṣacaritra, Vol. II, p. 191.

³ The Romantic Legend of Śākya Buddha, pp. 93-95.

⁴ Henry Clarke Warren, Buddhism in Translations, pp. 355-56.

⁵ Dhammapada Commentary, Part II, p. 141.

⁶ *Ibid.*, p. 142.

⁷ The Kathākoṣa, tr. by C. H. Tawney, p. 150.

immense, bringing in his good fortune.¹ Śrī Harṣa also mentions in his *Ratnāvalī*, the wonderful skill of a monk, versed in the science of floriculture who could make flowers blossom in and out of season.²

PAINTING

Painting, with a solid foundation in science and with its hold on human nature on account of its æsthetic appeal, received a high degree of perfection in India; and it was enthusiastically cultivated by the students of perfect culture; and particularly by the members of the nobility. Painting was realised in ancient India as visual medium of moral education, as a sure and concrete path to the realisation of our higher selves. Painting is one of the grandest of fine arts requiring a high degree of skill and perfection in a painter. Varāhamihira, a fifth century scholar, knew full well, that painting requires skill,³ for its success. Haribhadra Śūri also mentions in his *Samarāiccakahā* that cleverness and excellence⁴ are essential necessities to ensure success in painting.

¹ Vidyāpati Ṭhākura, *The Test of a Man*, p. 144.

² Śrī Harṣa, *Ratnāvalī*, tr. by H. H. Wilson, Act II, p. 16.

³ Varāhamihira, *Bṛhat Jātaka*, tr. by Subrahmanya Sastri, p. 301.

⁴ Haribhadra Śūri, *Samarāicca Kahā*, tr. by M. C. Modi, p. 82.

MUSIC

Thus, music too, like painting is a means of education, a source of delight, and an aid to the permanent inculcation of the higher truths in the mind. This love of music is innate in humanity; and the development of it is, and should be the aim of all high culture. This is why the importance of it was felt in religion and religious devotion in the very early vedic period; and almost all the important verses of the *Ṛgveda* were or rather had to be set in tune.

Success in music—vocal or instrumental, requires specific skill, as is evident from the *Sāmaveda*.¹ *Varāhamihira* regards cleverness or skill as a means of success not only in music but also in all the arts.² *Bhāsa* in his *Svapnavāsavadattam* speaks of regular succession of notes in instrumental music which *Vāsavadattā* forgot while playing on the *Viṇā*.³ Here the author was thinking of auditory image, so essential in playing upon musical instrument. Mention is also made of musical skill or efficiency in the *Vivāgasuyam*, the eleventh Jaina *Aṅga*.⁴

¹ *Sāma Veda*, tr. by Ralph T. H. Griffith, pp. 283, 290.

² *Varāhamihira*, *Bṛhat Jātaka*, pp. 402, 446.

³ *Bhāsa*, *Svapna-Vāsavadattam*. tr. by S. Subba Rau, Act V, p. 37.

⁴ The *Vivāgasuyam*, tr. by V. J. Chokshi and M. C. Modi, pp. 23-24.

Merutuṅga Ācārya, a Jaina monk refers to "skill in singing"¹ in his *Prabandhacintāmaṇi*. Hemacandra, another Jaina scholar of the twelfth century A.D. mentions in his *Triṣaṣṭiśālākā-puruṣa-caritra* skill in playing musical instruments. We quote below from the above-mentioned work in support of our statement : "Are you skilled on the lute, or expert on the flute, or clever in playing the kettle-drum, or proud (of skill) on the drum?"²

DANCING

Dancing was a recognised art requiring specialised skill. According to the ancient ideal, actors and dancers must possess specific talent to ensure their success in the dramatic profession. Kālidāsa mentions "theatrical talents"³ in his famous *Śakuntalā*. Success in dancing requires specific skill. The dancer must possess personal beauty and mobility of limbs. To ensure success in dancing, it must be accompanied by jestures. The *Mārkaṇḍeya purāṇam* describes the qualification of a dancer as follows : 'Let her, amongst you, who considers herself as superior in beauty and mobility dance before me (34). One, devoid of beauty and accomplishments, cannot attain to consummation in dancing. A dancing which is accompanied by

¹ Merutuṅga Ācārya, *The Prabandhacintāmaṇi*, tr. by C. H. Tawney, p. 121.

² Hemacandra, *Triṣaṣṭiśālākā-puruṣacaritra*. Vol. II, p. 191.

³ Kālidāsa, *Śakuntalā*, tr. by Sir William Jones, p. ii.

gestures is (real) dancing—anything else is but infliction (35).'¹ The same view is again stressed by Kālidāsa in his famous *Mālavikāgnimitram* while describing the musical and dancing skill² of *Mālavikā*, the heroine of the play. Proficiency in musical and simple dance, is spoken of in the *Vivāgasuyam*,³ the eleventh Jaina *Aṅga*. From these textual references, it is evident, the art of dancing was recognised as a highly developed art in ancient India, requiring special skill on the profession. It was a popular as well as an aristocratic art, meeting the warm and enthusiastic patronage of the court and the nobility. It was also a necessary part of education, and specially female education.

PHYSICAL EDUCATION

Like dancing, physical training is also greatly connected with the sense and the motor activities. Physical education in ancient India reached a high degree of perfection, requiring specialisation in the field. It is mentioned in the *Kalpasūtra* how men, skilled in the art of *lepakarma*⁴ or ointment rubbed and shampooed king *Siddhārtha* of *Vaiśālī*, father

¹ *Mārkaṇḍeya Purāṇam*, tr. by Manmatha Nath Datta, p. 4.

² *Kālidāsa, Mālavikāgnimitram*, Act II, v. 3.

³ *The Vivāgasuyam*, tr by V. J. Chokshi and M. C. Modi, p. 24.

⁴ *The Kalpasūtra and Navatativa*, tr. by J. Stevenson, p. 58.

of Lord Mahāvīra in the royal gymnasium (aṭṭana-śālā). Boxing and wrestling reached a perfect stage of development in ancient and mediaeval India, which required much skill, and technique on the part of the wrestler. Kathāsaritsāgara tells us how Aśokadatta, a young man of Benares having studied sciences, learnt boxing and wrestling, and gradually acquired eminence¹ in these branches of sciences. One cannot help in this connection referring to the signal skill displayed by Bhīma and his rival, Duryodhana in the art of boxing, which ultimately proved fatal to the latter.

We have already referred to the science of fighting giving birth to the cognate, subordinate arts of managing horses and elephants. We propose to go somewhat more into the details of the subject here. In the Ṛgvedic period horses were trained for military as well as civil purposes, and the training of the horses, was given the status of a distinct branch of science.² Both Śukrācārya and Kauṭilya mention the training of horses for military purposes and hold that the trainer³ of the horses must be very skilful in restraining the horses, possessed of keen senses, especially of the sense of sight and hearing. Consequently a distinct branch

¹ Kathāsaritsāgaraḥ, Āditastaraṅgaḥ 25, Taraṅgaḥ 2, vs. 119-20, also tr. by C. H. Tawney, Vol. I, pp. 210-11.

² Ṛgveda Samhitā, tr. by H. H. Wilson, Vol. I, v. 7, p. 151; *Ibid.*, Vol. V, Aṣṭaka 6, Adh. 4, v. 3, p. 113.

³ Kauṭilya, Arthaśāstra, pp. 166-67; Śukrācārya, Śukra-nīti, p. 78.

of horse-science was developed in ancient India which is mentioned in the Mahābhāratam.¹ At a later period the Jaina authorities also mentioned the training of the horses on a spacious ground or hippodrome, especially reserved for the purpose.² Elephants were also trained for similar purpose. Kathākoṣa, another Jaina text tells us how a king was skilful³ in the managing of elephants. We learn from the Ṛgveda that military science, in hoary antiquity, demanded physical strength, vigour and manual skill.⁴ Hemacandra, a famous Jaina scholar mentions skill in various implements of war such as shield, sword, lance, arrows, long-spear, mace, discus, and dagger.⁵ Śrīkṛṣṇa, in his conversation with Draupadī speaks of skill and efficiency, achieved by her sons in archery in the following verse :

“Kṛṣṇe ! dhanurvedaratipradhānāstavātmaajāste
śīśavaḥ suśīlāḥ.”⁶

¹ The Mahābhāratam, Vol. IX, Virāṭaparvan, Canto 111, v. 3, p. 21 ; Vol. II, Udyogaparvan, Canto 168, v. 11, p. 1470.

² Haribhadra Sūri, Samarāicca-kahā, tr. by M. C. Modi, p. 19.

³ Kathākoṣa, tr. by C. H. Fawney, p. 141.

⁴ Ṛgveda Śāmhita, tr. by H. H. Wilson, Vol. III, Aṣṭaka 3, Adh. 7, v. 6, p. 192, v. 8, p. 7 ; v. 6, p. 192.

⁵ Hemacandra, Triṣaṣṭīśālākā-puruṣacaritra, Vol. II, p. 191,

⁶ The Mahābhāratam, Vol. II, Vanaparvan, Canto 154, v. 24, p. 1532 ; Manual of Buddhism, p. 381.

Our brief discussion of physical and military training reveals that specialisation was much in vogue in these two important branches of human knowledge, and that the writers of ancient India knew full well that success in these professions demands physical vigour and manual skill from those, seeking employment in these professions.

The craft of a barber¹ and that of basket-making² also demand specific skill from the workers for success. It is needless for us to multiply our illustrations. Our discussion, though brief, shows the fundamental truth, that each profession—mental or manual, required specific skill for success—a fact astonishingly modern.

VOCATIONAL GUIDANCE

The ancient Hindus not only knew that specific skill and abilities are of essential necessity for each occupation—high or low, but they also applied the scientific method in directing the vocational selection of their children, which will now be the topic of our discussion. In hoary antiquity, during the time of the Mahābhārata, nepotism was not known, and ability—general or specific, was the standard of occupational selection. The employers

¹ The Vivāgasuyam, tr. by V. J. Chokshi and M. C. Modi, p. 71.

² Henry Clarke Warren, Buddhism in Translations, Foot note ref. :—The Sumanāgala Vilāsinī, Cushing mss. p. 353.

took special care in placing right candidates for the right type of jobs so as to eliminate vocational misfits as it were. We get clear evidence of it in the Mahābhāratam, wherein are mentioned three distinct groups of men—the best (uttama), the average (madhyama), and the worst (adhama), possessed of corresponding levels of intelligence, and appropriate vocations were recommended for them, as it is evident from the following verse :

“ kaccinmukhyā mahatsveva madhyameṣu ca
madhyamāḥ
 jaghanyāśca jaghanyeṣu bhṛtyaḥ karmasu
yojitāḥ.”¹

Identical view is again stressed in the Mahābhāratam in the following verse :

“ Kaccidviditvā puruṣān uttamādhama madhyamān
 Tvam karmasvanurūpeṣu niyojayasi Bhārata !”²

The Agnipurāṇam also supports the above view for vocational adaptation, when it recommends the placement of the workers on vocations after a thorough ascertainment of the three distinct levels of intelligence—the best, the average and the worst. The following verse bears us out :

“uttamādhama madhyāni buddhvā karmāṇi pāṛthivaḥ
 uttamādhama madhyāni puruṣāṇi niyojayet.”³

¹ The Mahābhāratam, Sabhāparvan, Canto V, Vol. IV, v. 43, p. 46.

² *Ibid.*, Canto V, v. 75, p. 56.

³ The Agnipurāṇam, ed. by Pancanan Tarkaratna, p. 422 ; Garuḍa Purāṇam, Purvakhaṇḍam, Canto 112, VI.

Thus according to the ancient Hindus, levels of intelligence were the criteria of occupational selection: right type of man, possessed of proper intelligence, was placed on the appropriate vocations—a practice thoroughly modern.

The Buddhist and the Jaina scholars also mention vocational guidance on the basis of native ability. We learn from the Vinaya Text how the parents of Upāli at Rājagṛha made a careful survey of merits and demerits of writing, arithmetic and money-changing, before making final selection for the profession of priesthood. Thus they took into account the retarding influences of writing, arithmetic and money-changing: writing will sore the fingers, arithmetic will disease the breast and money-changing will strain the eyes.¹ Though here we get a clear idea of the modern conception of the typical basis of occupational selection, the current practice of vocational choice was arbitrary as the opinion of young Upāli was not taken into account by his parents in their final choice of monastic life for their son. It is a matter of legitimate pride for us that our ancestors were so very deep and scientific in their application of the principles of psychology, to all the vocations of life—high or low. They were the practical scientists before the boasted era of science.

¹ The Vinaya Text, tr. by T. W. Rhys Davids and Hermann Oldenberg, Part I, paras. 1-2, p. 201.

We, however, learn from the Ceylonese source a different practice in occupational selection. There it is said of young Jivaka, seven or eight years old, who made a careful survey of the characteristics of the eighteen sciences and the sixty-four arts—the whole range of the Brahmanic education before he made his final choice of medical science.¹ Jivaka must have been much older than seven or eight years, for it was not possible for any scholar, however brilliant he might be, to acquaint himself with this encyclopaedic curriculum at this young age. It requires maturity of age to exercise sound judgment in the careful selection of life's vocation. Besides, Jivaka was thinking not only of riches and honour through a suitable vocation but also of relations, possible only to secure through matrimony. Briefly speaking, Jivaka was thinking of a suitable employment and life's companion which are sacred to the heart of every adolescent, a fact already pointed out in our chapter on adolescent psychology. The Vinaya Text, however, tells us that Jivaka came to "the years of discretion"² at the time of his vocational selection. Taking together the two above facts—the vocational choice of young Upāli and that of Jivaka, we can safely conclude that though sometimes parents

¹ Manual of Buddhism, tr. by R. Spence Hardy, p. 238.

² The Vinaya Text, tr. by T. W. Rhys Davids and Hermann Oldenberg, para. 5, p. 174.

decided vocational choice for their immature son, it was universal for the young adolescents to make a careful selection of life's occupation after a thorough survey of the entire range of curriculum.

Vidyāpati Thākura, a much later authority, suggests that intelligence or native ability should be determinant in the selection of art curriculum.¹ The various techniques or practices current in ancient India are already discussed in connection with our discussion on 'intelligence'. Suffice it to state here, that modern practice of placement on vocations further to explore native and specific abilities for rightful selection of life's career was followed in ancient India. Thus we learn from the Tibetan Buddhist tales, translated from the Tibetan of the Kah-Gyur, that Jivaka learnt various crafts from practical workmen to have a first-hand experience of various trades and industries, before he made his final selection of his life's occupation.² Hemacandra, a famous Jaina savant subscribes to the same view, when he tells us in his *Triṣaṣṭiśālākāpuruṣacaritra* how Sagara, a prince of the house of Vinita (Mod. Oudh) in ancient time out of his desire to be taught by

¹ Vidyāpati Thākura, *The Test of a Man*, tr. by Sir George Grierson, p. 179.

² Tibetan Tales derived from Indian Sources, tr. from Tibetan of the Kah-Gyur into German by Von Schiefner F. Anton and tr. into English by W. R. S. Ralston, pp. 92-93.

Ajita Svāmin in military tactics and sciences, made a demonstration of his feats in the wonderful exercises of weapons. It proves beyond doubt that it was customary in ancient India for scholars to make a demonstration of their skill before being further encouraged to proceed to their courses of study. The following quotation bears us out: "From devotion to his teacher and a desire to be taught by him he showed Ajita Svāmin his skill in other weapons also.....So both, engaged in activities according to their natures, crossed the first period of life."¹ This practice in ancient India may quite appropriately be compared with the modern practice of administering performance test to explore vocational talents.

Some pseudo-sciences also played a significant rôle in vocational and educational guidance as is evident from the *Bṛhatjātaka* and the *Bṛhatsāmudrika*. The science of palmistry, once so popular in India, exerted a tremendous influence on our vocational selections. Volumes were written on the subject. Suffice it to say, that some predictions on vocational success from the *Bṛhatjātaka* as well as from the *Bṛhatsāmudrika* will support our views. Thus according to *Bṛhatjātaka* a man is sure to excel in the stage either as an actor, musician or dancer, if he is born under the joint influences of Mercury

¹ Hemacandra, *Triṣaṣṭīśālākā-puruṣacaritra*, Vol. II, p. 71.

and Jupiter.¹ Again one excels in this profession as well as in every other kind of works if born in Viṇā Yoga.²

It is abundantly clear from the above that the writers of ancient India knew full well that intelligence is of two types—general and specific. Each profession makes specific demand upon the intelligence of each worker. The keynote of success in vocations is the proper adjustment between the man and his vocation. To ensure such success, vocational and educational guidances were in vogue in our country for the young pupils in the past. The citizens, the parents as well as the city supervisors took keen interest in vocational counseling.

¹ Varāhamihira, *Bṛhatjātaka*, tr. by Subrahmanya Śāstri, p. 299.

² Varāhamihira, *op. cit.*, p. 275.

CHAPTER XI

RESUMÉ

In this, the concluding chapter, we propose to discharge the not very enviable task of offering a resumé of the whole book which may be found tiring to the specialists and useful to lay men who may not have either the patience nor the inquisitiveness to go through the whole of a dry treatise. Our work is based on first hand study of raw materials supplied by Hindu and cognate sources.

The principal theme of the book is Hindu psychology applied to the field of education ; and it is briefly discussed in ten chapters, the titles of which are indicative of the contents. The chapters are : I. Child Psychology, II. Adolescent Psychology, III. Sensation, IV. Perception, V. Imagination, VI. Memory, VII. Intelligence, VIII. Heredity and Environment, IX. Psychological basis of Hindu Education and X. Vocational Psychology. As its title implies the chapter on Child Psychology deals with the growth and development of the mind of the child in all its stages and phases of development. Here the close relation existing between the mind and the body is duly emphasised. Copious references from standard authors have been given in order to illustrate the purely physical character of the child.

This picture is a realistic one : it is not the picture of unsophisticated divinity or of an infant philosopher of which the poets dreamt. The child is after all a child, possessing sensation, a wicked naughty being needing education and capable of education.

The second chapter devoted to adolescent Psychology deals with the development of the mind in the adolescent in a distinct physical environment. We have in the text dealt with matter of purely psychological significance borrowing our materials from different sources, particularly from poetical literature. Some kind of romance and love are necessarily connected with the period of adolescence ; and as such the passages of erotic import quoted from authoritative texts must be studied in the light of educational psychology and not otherwise.

The third chapter which is devoted to sensations does not give anything new to the readers of to-day ; but it throws an interesting flood of light on the remarkable development on the scientific knowledge of psychology attained by the ancients in India literally anticipating the most advanced compeers of to-day. Exactly the same remarks apply to our fourth chapter which is devoted to sense-perceptions. Care has been taken in both these chapters to study the phenomena of sensations and perceptions from the distinctly educational standpoint.

The fifth chapter which is devoted to imagination shows how the importance, vitality and above

all the poetical and constructive utility of the phenomena of imagination were realised by Indian authority on Philosophy and Literature. The development of the faculty of imagination was recognised as practical science or art and the parents and the educators in ancient days laid proper emphasis on it.

The sixth chapter is devoted to memory in which we properly emphasise the importance of memory as a source of knowledge and a good deal of space has been devoted to the discussion of its nature and the method of development.

The seventh chapter deals with intelligence and is devoted to phenomena of intelligence in all its respects. Various definitions are discussed and criticised. A classification of intelligence is given and suggestions are offered for its development. The special features of intelligence are elaborately dealt with.

The eighth chapter which is devoted to heredity and environment does full justice to the topic. It emphasises the paramount importance of ideal environment facilitating the fullest development of the faculties of the mind. We have taken care to show that a favourable environment can develop but cannot create the faculties which must be innate.

The ninth chapter which is devoted to the psychological basis of Hindu Education is rather of a technical nature. It contributes a critical discussion of the educational programme of the growing child

up to the dawn of puberty. This is followed by a classification of childhood. The importance of the physical atmosphere on the purity of the mind of the growing child is discussed. The topic of juvenile punishment receives a scientific, elaborate and careful attention. It is shown how the close relationship between the education and the educand was recognised in all its vital importance by the theorists of ancient India. Incidentally all the fine arts are touched from our peculiar educational standpoint. The mental discipline of dancing and the cognate arts is properly evaluated. The phenomena of attention which is of great importance in education is elaborately dealt with and copiously illustrated with authoritative texts.

The tenth chapter which is devoted to vocational psychology deals with a topic which is of especial importance in these days, practically all the civil arts as well as the arts of defence come in here for consideration. The elementary needs of life, the specific and general abilities of the educand and the topics like medicine, nursery, minerals, jewellery, etc., are dealt with incidentally. The fine arts like music and painting again come in for consideration.

Thus, on the whole, the readers will find here a short encyclopædia of information interspersed with critical comments relating to the interesting phenomenon of educational psychology in ancient India.

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